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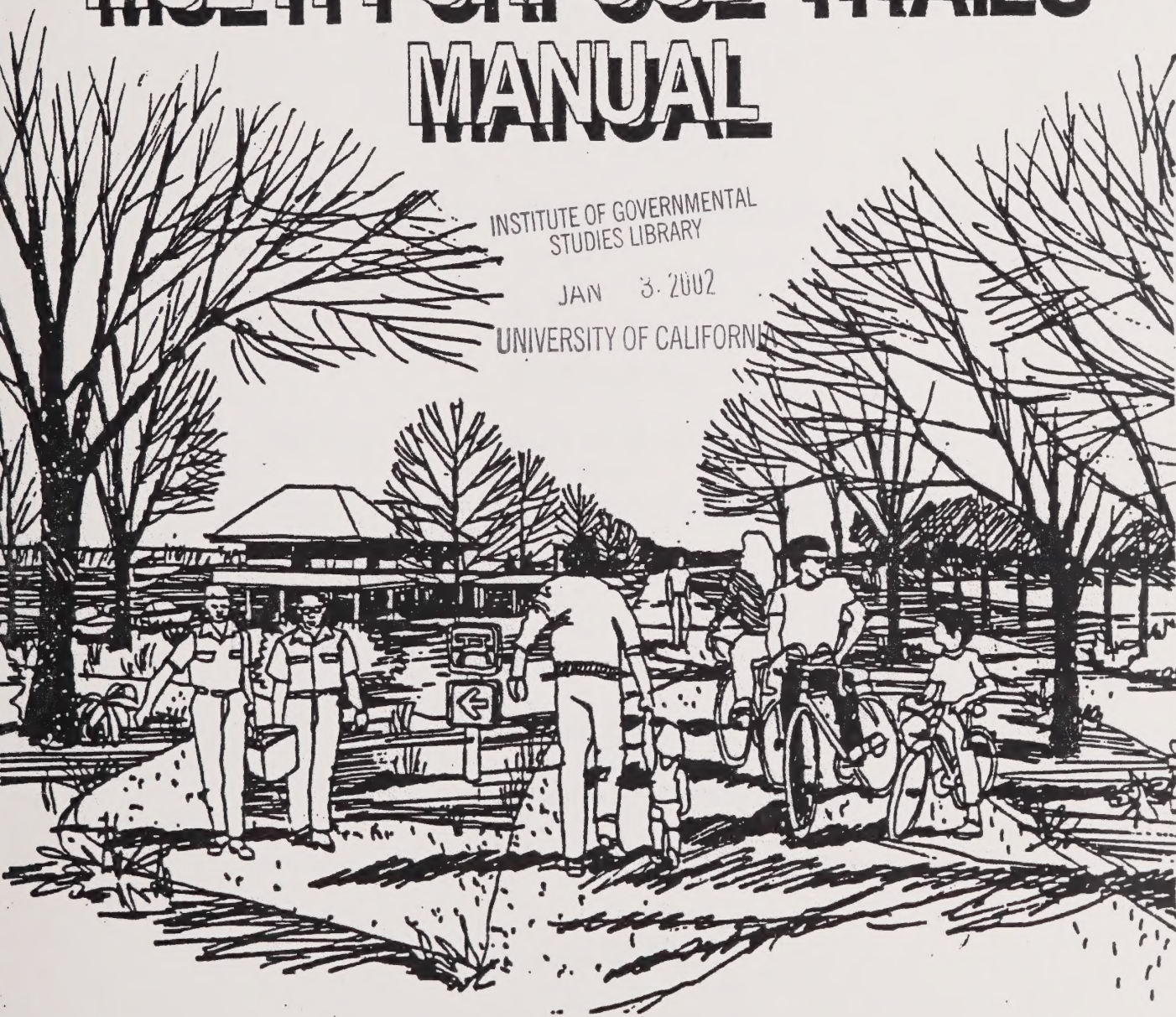
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# MASTER MULTI-PURPOSE TRAILS MANUAL

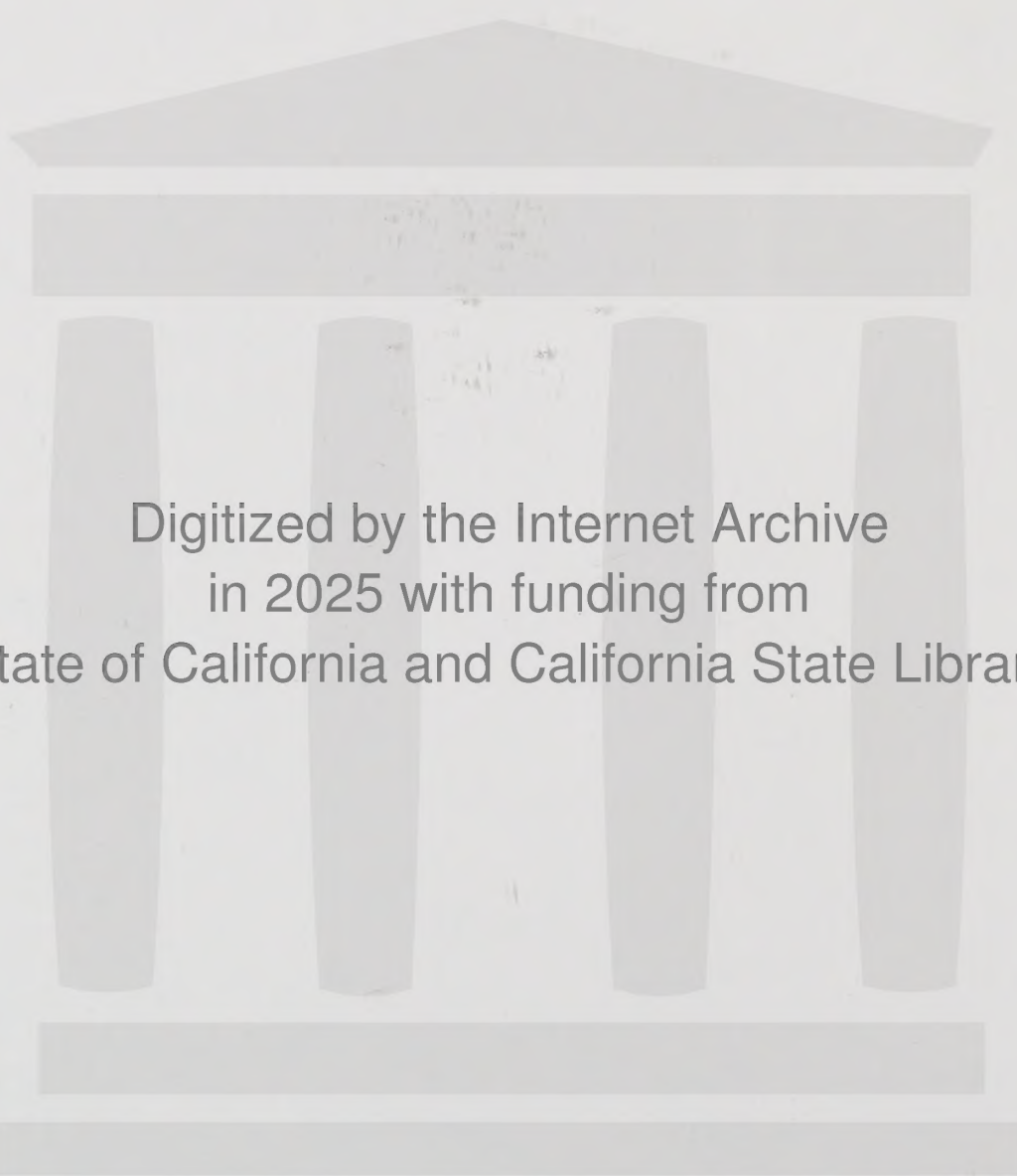
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## TABLE OF CONTENTS

|                                   |   |
|-----------------------------------|---|
| CHAPTER 1: INTRODUCTION           | 1 |
| 1.1 Background and Purpose        | 1 |
| 1.2 Jurisdictional Responsibility | 2 |
| 1.3 Trail User Needs              | 2 |

|                                          |   |
|------------------------------------------|---|
| CHAPTER 2: EXISTING TRAILS PLANNING      | 4 |
| 2.1 Plans by Local and State Governments | 4 |
| 2.2 The San Joaquin River Parkway        | 4 |

## CITY OF FRESNO

## MASTER MULTI-PURPOSE TRAILS MANUAL

|                                           |    |
|-------------------------------------------|----|
| CHAPTER 3: TRAIL DEVELOPMENT AND PLANNING | 12 |
| 3.1 The Existing Trail System             | 12 |
| 3.2 Potential Trail Corridors             | 13 |
| 3.3 Recommended Trail Corridors           | 13 |
| 3.3.1 Multi-Purpose                       | 13 |
| 3.3.2 Single-Use                          | 13 |

Prepared for

The City of Fresno Development Department  
and  
The Council of Fresno County Governments

|                                             |    |
|---------------------------------------------|----|
| CHAPTER 4: TRAIL DESIGN                     | 17 |
| 4.1 Trail Design Standards                  | 17 |
| 4.2 Bicycle Trail Design Standards          | 20 |
| 4.2.1 Bicycle-Only Trail Design Standards   | 20 |
| 4.2.2 Bicycle-Shared Trail Design Standards | 20 |
| 4.3 Trail User Access                       | 24 |
| 4.4 Right-of-Way Agreements                 | 24 |

Prepared by

|                                    |    |
|------------------------------------|----|
| CHAPTER 5: TRAIL IMPLEMENTATION    | 27 |
| 5.1 Potential Trail Implementation | 27 |
| 5.2 Trail Implementation           | 27 |
| 5.3 Trail Implementation           | 27 |

Land Use Associates  
and

The City of Fresno Planning Division

July 1990





## TABLE OF CONTENTS

|                                                                      |    |
|----------------------------------------------------------------------|----|
| CHAPTER 1: INTRODUCTION . . . . .                                    | 1  |
| 1.1 Background and Purpose . . . . .                                 | 1  |
| 1.2 Jurisdictional Responsibility . . . . .                          | 2  |
| 1.3 Trail User Needs . . . . .                                       | 2  |
| CHAPTER 2: RECREATION TRAILS PLANNING . . . . .                      | 4  |
| 2.1 Plans by Local and State Government . . . . .                    | 4  |
| 2.2 The San Joaquin River Parkway . . . . .                          | 6  |
| CHAPTER 3: GOALS AND POLICIES . . . . .                              | 8  |
| CHAPTER 4: TRAIL CORRIDORS DEVELOPMENT ANALYSIS . . . . .            | 12 |
| 4.1 The Existing Trail System . . . . .                              | 12 |
| 4.2 Potential Trail Corridors . . . . .                              | 13 |
| 4.3 Recommended Trail Components . . . . .                           | 15 |
| 4.3.1 Multi-Purpose Trails . . . . .                                 | 16 |
| 4.3.2 Single/Limited Use Trail Corridors . . . . .                   | 23 |
| 4.3.3 Publicly Owned Trail Development Areas . . . . .               | 25 |
| CHAPTER 5: TRAIL DESIGN, ACCESS AND CONSTRUCTION STANDARDS . . . . . | 27 |
| 5.1 Trail Design Standards . . . . .                                 | 27 |
| 5.2 Bicycle Trail Design Standards . . . . .                         | 30 |
| 5.2.1 Bikeway Design Guidelines . . . . .                            | 31 |
| 5.3 Trail User Access . . . . .                                      | 34 |
| 5.4 Right-of-Way Agreements . . . . .                                | 35 |
| CHAPTER 6: TRAIL IMPROVEMENT FINANCING OPTIONS . . . . .             | 37 |
| 6.1 Potential Multi-Purpose Trail Development Costs . . . . .        | 37 |
| 6.2 Development and Phasing Assumptions . . . . .                    | 40 |
| 6.3 Financing Alternatives . . . . .                                 | 40 |





## CHAPTER 1

### INTRODUCTION

#### 1.1 Background and Purpose

On June 27, 1989, the Fresno City Council approved a General Plan Amendment for a Master Parks Plan for the city of Fresno. At that time, the Council also directed that a Master Multi-Purpose Trails Plan for the Metropolitan Area be prepared for initiation as an amendment to the General Plan Open Space and Recreation Element. The Trails Plan would address hiking, jogging, cycling, and equestrian trails primarily for recreation purposes. The Council further stated that the General Plan amendment for the Trails Plan should be completed within a two-year period.

This conceptual plan is being termed a Trails Manual. Based on the information in the Manual, City staff will prepare a General Plan amendment for Council initiation. This amendment would constitute the City's Master Multi-Purpose Trails Plan.

The Manual has been written as a cooperative effort between City of Fresno Planning staff and Land Use Associates, a planning consulting firm hired by the Fresno County Council of Governments.

The Manual covers potential trail corridors for equestrians, hikers, walkers, cyclists, runners, and the physically disabled, and evaluates existing and potential trails from planning to the development phase. The Manual also identifies goals and policies; trail design, access, and construction standards; and financing cost options.

Although the Manual provides an evaluation of existing and potential trail corridors, it is conceptual in nature and does not establish specific plan lines for future trail alignments. The Manual is intended to be used as a resource guide in developing potential multi-purpose trail corridors within the Fresno-Clovis Metropolitan Area. It consists of this primary document and an extensive appendix of supporting maps and materials.

The citizen participation component for the Manual consists of trail user groups and interested parties such as the San Joaquin River Trail Council, Horse Owners for Trails, Fresno Cycling Club, and the San Joaquin River Parkway and Conservation Trust. Input from these groups is through a ten-member advisory committee appointed by the Fresno City Council.



## 1.2 Jurisdictional Responsibility

The focus of the Manual is primarily within the City of Fresno Sphere of Influence. Portions of trail corridors, however, link and traverse into Fresno County, Madera County and the City of Clovis. Jurisdictional responsibility affecting the implementation of the trail corridors will therefore depend upon continued cooperation between the City of Fresno, the City of Clovis, and Fresno and Madera Counties.

Land ownership interests affecting the development of future trail corridors could consist of private property owners; the State of California; the County of Fresno; the City of Fresno; Pacific Gas & Electric Company; the Fresno Irrigation District; the Fresno Metropolitan Flood Control District; the Southern Pacific Railroad; and the Santa Fe Railroad.

These identified land ownership interests would be affected when trail corridors are developed along the San Joaquin River area; regional city parks/preserves; PG&E transmission easements; canal banks; flood control facilities; railroad rights-of-way; and major streets and highway corridors.

The feasibility of developing trail corridors within a reasonable period of time (5-10 years) will be contingent upon the cooperation between all parties having a fee or an easement interest. It will therefore be incumbent upon all prospective trail users to carefully monitor development proposals which may jeopardize the completion of future trail corridors.

## 1.3 Trail User Needs

The goal of achieving the optimum use of a trail is one which cannot be met unless considerations are made in trail design and construction standards which meet user needs. The identification of trail routes, support facilities and adequate access must also take into account user's needs, including those of the physically disabled. Potential user needs are:

### 1. Pedestrian Trails

Pedestrian trails should address nature-hiking senior citizen walkers, jogging loops and long-distance runners. In trails throughout the state, hikers and joggers generally use equestrian or bicycle trails. As increasing number of people use trails, conflicts often arise. Separate pedestrian trails should not be paved, instead they should have a natural surface.

Pedestrian trails should also include a physical separation from cyclists and from motor vehicle traffic for



safety. This physical separation could be in the form of a grade change or by a landscaped berm or rail/wooden fence. Further, pedestrian trails may require rest stops with drinking water and restrooms.

## 2. Equestrian Trails

Equestrians prefer scenic trails on a natural dirt surface with variations in terrain. These trails are usually six to eight-feet in width and must be kept from motor vehicles and bicycle traffic to avoid conflicts due to unpredictable horse behavior. Equestrians also require staging areas which are rest stops at terminus points that include adequate access/parking for vehicles and trailers, drinking water and restrooms.

## 3. Bicyclists/Physically Disabled

Non-mountain bike cyclists require wide trails and a smooth surface to accommodate a large number of users, wide-range of speeds and often long distances. An all-weather surface should be provided that could also accommodate the needs of disabled recreationists.

The obvious route for wheelchair use is the paved bicycle trail, but conflicts do exist with cyclists due to wheelchair widths and their relative slow speed. The design of trails and access should take into account disabled recreationists to the degree feasible. Designated handicapped accessible trails could be installed at acceptable widths and grade in workable locations. These trails could provide wheelchair recreationists with opportunities for a wide range of recreational experiences such as access to the riverbottom, river bluff vista points and picnic facilities at regional park sites.



## CHAPTER 2

### RECREATION TRAILS PLANNING

There have been few formal plans adopted by local or state governments which deal with the trails issue in the Fresno area. Even when plans have been adopted, local government has been slow to implement components of the plans, primarily, due to fiscal constraints or a lack of commitment. Following is a brief discussion of the major planning documents which have been prepared over the past 20 years which contain trail components.

#### 2.1 Plans by Local and State Government

##### 1. 1974 Fresno-County Recreation Trails

This plan was formulated by County Parks & Planning departments in conjunction with a committee composed of hikers, bicyclists, and equestrians. The plan recommended the use of irrigation canal/flood control service roads and the joint use of railroad rights-of-way.

The 1974 Fresno-County Recreation Trails Plan identified eleven recreational trails within the Fresno-Clovis Metropolitan Area. These trails are the 1) Millerton Trail; 2) Friant-Kern Canal; 3) Copper-Auberry Trail; 4) Enterprise Trail; 5) Dry Creek Trail; 6) Belmont Trail; 7) Golden State Bikeway; 8) Roeding-Kearney Trail; 9) Kearney Trail; 10) The Van Ness Trail and the San Joaquin Riverbottom and Bluff's Trail (see Appendix for Trail Maps).

According to Fresno County Staff, these identified trails are still conceptual in nature and lack the necessary financing for implementation. The County staff is now preparing a specific plan for the Friant Community and includes planning of the Millerton Trail along Friant Road from the Willow intersection to Friant with a tie to Lost Lake park. The trail is to be separate gravel base within a 15-foot right-of-way adjacent to the bike lane as Friant Road.

##### 2. 1975 City of Fresno Bikeways Plan

The 1975 Bikeways Plan was adopted by the Fresno City Council and identified a bicycle transportation network for the metropolitan area. The focus on recreational cycling was limited; the plan does, however, propose bikeways along canal banks, as well as an educational



program to inform cyclists and auto drivers of their rights and regulations supporting safety.

3. 1984 Fresno General Plan

The Fresno General Plan identified land acquisition as the major obstacle in implementing recreational trails within the San Joaquin River area. It further recommended the adoption of State legislation involving San Joaquin River riparian water rights to assist in determining legal ownership and in obtaining financing for the implementation of recreational trails.

4. 1988 Bullard Community Plan

This plan represents the latest Fresno City land use policy which will direct the physical growth of the Bullard Community for the next twenty years. The plan also sets forth policies and implementation measures which may affect the development of a trail corridor along the San Joaquin River area between the Southern Pacific Railroad alignment and North Blackstone Avenue.

Complementing trail corridors, vista points along the bluffs provide limited bluff access and offer panoramic views of the riverbottom and bluffs. The Bullard Community Plan identifies six vista points. Of these six, two sites have been set aside for development through tentative map approval. The four remaining sites are:

- a. At the southern end of the Riverview Estates between the extension of Ingram and Palm Avenues.
- b. Between Milburn and Blythe Avenues, west of the Sierra Sky Park clear zone.
- c. On the bluff at the extension of the Polk Avenue alignment, overlooking the proposed San Joaquin River Regional Park.
- d. At the western end of Riverside Golf Course.

To assure the future development and the maximum utilization of the four remaining vista points, the recommended trail corridors will identify potential linkages between any future bluff or riverbottom trail (see Hiking & Riding Design Standards for Potential Vista Point Design Standards).



5. 1989 Woodward Park Community Plan

This plan represents the latest Fresno City land use policy which will direct the physical growth of the Woodward Park Community. The plan also sets forth policies and implementation measures which establish trail corridors along the San Joaquin River. Further, the plan proposes a bike path and a multi-purpose trail along Copper, Shepherd and Willow Avenues.

6. 1988 Herndon-Shepherd Specific Plan (Clovis)

This plan proposes an open space green-belt with a multi-use trail system extending approximately six miles along Big Dry Creek and the Enterprize Canal. To accommodate use by equestrians, pedestrians/joggers and bicyclists, the plan proposes two trail surfaces -- one for horses and one with asphalt for other uses.

7. 1981 Clovis-East Sierra Specific Plan

This specific plan proposed a linear green-belt park extending through a PG&E utility easement. The linear park would be used for pedestrian and bicycle trails.

8. 1978 California Recreation Trail Plan

The California Recreation Trail Plan contains the "Fresno-Mammoth Trail" which could be accessed through components of the urban trail system.

## 2.2 The San Joaquin River Parkway

The San Joaquin River Parkway represents the greatest opportunity to implement a multi-purpose trail corridor in the metropolitan area. The concept of the parkway has gained widespread support and is supported by adopted policy of the Fresno General Plan and Bullard and Woodward Park Community plans. The parkway corridor is also a primary component of the Trails Manual. Two important planning documents have been prepared for the parkway environs although no formally adopted plan yet exists. These documents are:

1. 1986 San Joaquin River Area Reconnaissance Study

This study was a cooperative effort between the counties of Madera/Fresno and the City of Fresno. The main goal of the study was to promote better planning and coordination as the basis for future land development decisions within the riverbottom area. The study limited its focus to the collection and analysis of existing information and made no recommendations on any development proposal.



The reconnaissance study evaluated a 22 mile long portion of the San Joaquin River from Friant Dam to Westlawn Avenue (being 1 mile west of Freeway 99), and contains comprehensive resource data on land use and environmental resources.

2. 1989 San Joaquin River Parkway & Environs Conceptual Plan

This plan was prepared for the San Joaquin River Parkway and Conservation Trust. The conceptual plan proposes the following objectives.

- a. To preserve, protect, enhance and restore natural eco-systems and resource values along the river corridor.
- b. To identify a parkway concept which recognizes existing legal uses of land and water resources in the river corridor.
- c. To define a system of controlled public access for educational and recreational use of the river and its related resources.
- d. To recommend guidelines and standards for defining, implementing and managing the parkway.

The City Council has requested that staff develop a plan amendment to incorporate elements of the San Joaquin River Parkway and Environs Conceptual Plan for initiation.

The Trust prepared the Conceptual Plan through a nine-month, open planning process. The thoughts and concerns of hundreds of agencies, special districts, organizations, property owners, and interested citizens have entered into this proposal. The Conceptual Plan was the first effort to describe what could be appropriate in a parkway to serve the goals, aspirations, and concerns of the community.



## CHAPTER 3

### GOALS AND POLICIES

This section presents the major goals and policies for the City of Fresno to provide for recreational trail development. Policies give meaning to short and long term direction and express what the community is capable of achieving over time. A major premise is that while local government exists to provide a variety of services, other government agencies, the private sector, and a wide range of community organizations are also responsible for implementing an urban trails program.

- 3.1 Goal: To provide safe and viable recreational trails to residents of the Fresno Metropolitan Area.

Policies:

1. Make available the recreational activities afforded by potential trail corridors, including aquatic features, environmental amenities, and the historic values of the locations and to interpret those resources to the public.
2. Assure that potential trail corridors be accessible to all members of the community, including the disabled.
3. Develop trails which provide safe access and utility from urban areas to regional recreational facilities for hikers, runners, cyclists and equestrian.
4. Establish a safety ordinance which ensures adequate police, fire and paramedic services to the public and surrounding properties within the trail system.
5. Emergency vehicle access within the trail corridors may be provided via parking areas, service roads, levee crowns, equestrian trails, pedestrian trails, bicycle trails, and fire breaks. Service roads shall be interconnected where possible to permit through travel by emergency vehicles only.
6. Designate and design trails in accordance with design standards which give consideration to appropriate widths, surfacing, drainage, design speed, barriers, fences, signage, visibility, intersections, bridges, street cleaning, and the handicapped and elderly.
7. Designate trails to avoid incompatible uses wherever possible (i.e., equestrian and bicycle uses on the same trail).



8. Design trails to link focal points of the City such as regional parks, the central business district, work areas, shopping centers and major regional recreation destinations.

3.2 Goal: To secure the necessary right-of-way for trail construction.

Policies:

1. Require additional right-of-way along major streets where necessary to implement the recommended trail system.
2. Aggressively pursue the attainment of trail corridors within railroad rights-of-way, canal banks, PG&E transmission tower easements, major streets, and river-bottom/bluff areas. Existing easements and rights-of-way should be offered to local agencies before being sold to private parties.
3. Require as a condition of tentative tract approval that all tract maps incorporate development standards and trail corridor linkages as recommended by the trails manual.
4. All new development impacted by proposed trail locations shall dedicate easements which will provide safe and direct access to community or regional trails.
5. Work towards the adoption of official plan lines which depict the specific plan alignment for the San Joaquin River/Bluffs Trail.

3.3 Goal: To develop trails with minimum environmental impact.

Policies:

1. Surface trails with materials which blend in with the surrounding area while complying with safety and maintenance requirements.
2. Trails should be designated along existing drainage channels, utility right of ways, and other areas which must remain undeveloped.
3. Trails should follow contour lines and be aligned where the least amount of grading would occur.
4. Disturbance of the surrounding environment and cuts and fills should be kept to a minimum. In many instances,



either new landscaping or clearing would be desirable. Landscaping can be used for stabilizing slopes, creating physical or visual barriers, or providing rest areas, removing unwanted plants, or increasing sight distance.

5. Beautification of the right of way in a manner consistent with the operation and maintenance of the trail should be encouraged.
6. Vegetation removed to accommodate trails should be mitigated by planting equivalent vegetation in near proximity.

3.4 Goal: Designate the location and appropriate type of trail which has the greatest potential to serve the community.

Policies:

1. Evaluate potential Multi-Purpose Trail Corridors by employing existing linear rights-of-way such as; canal banks; utility power line alignments; railroad rights-of-way; regional parks and major street corridors.
2. Expand development of existing and/or proposed multi-purpose trails in Fresno County, Madera County and in the City of Clovis by using trail links.
3. Require that the bluff vista points designated by the Bullard and Woodward Park Community Plans to be linked where possible with proposed trails, and be developed in accordance with standards set forth in their plans.
4. Locate equestrian trails as close as possible to horse stables and clubs and should be designed in loops to prevent having to repeat the same route.
5. Install handicapped accessible trails should be installed, at an acceptable width and grade, at several locations throughout the trail corridors. All handicapped-accessible trails should be appropriately signed to discourage conflicting uses.
6. Encourage facilities such as staging areas, lighting, benches, bathrooms and drinking fountains along trails where appropriate.



- 3.5 Goal: To develop a method of financing trail construction and trail maintenance using a variety of revenue and human resources.

Policies:

1. Aggressively seek grants (State, Federal and local) and other funding sources for trail construction and maintenance and support the enactment of State and Federal legislation that would establish or expand urban trail development funds.
2. Support the establishment of public non-profit corporations with the purpose of promoting and supporting trail construction for the general public.
3. Continue to promote the use of volunteers and community groups for the operation, maintenance and development of trails.
4. Actively seek individual, private and corporate support for trail development.



## CHAPTER 4

### TRAIL CORRIDORS DEVELOPMENT ANALYSIS

Existing trail use in the Fresno Metropolitan Area consists primarily of informal use of major streets and other public right-of-way such as canal banks. There is a limited system of trails and walking paths developed by public and private entities. This "formal" trail system is not comprehensive, however, and suffers from lack of inter-connecting ties. The trail corridor development analysis reviews the existing trail system and makes recommendations for expansion. Existing and proposed trail corridors are shown on Figure 1.

#### 4.1 The Existing Trail System

1. Currently within the Fresno-Clovis Metropolitan Area there are no major linear open space-regional green belts. The only significant linear corridors being used consist of:
  - a. Huntington Boulevard, with a 125-foot right-of-way and a 45-foot-wide landscaped median island, a designated scenic drive between Freeway 41 and Cedar Avenues, one and one-quarter miles long, used primarily by walkers, joggers and cyclists.
  - b. Van Ness Boulevard, a designated scenic drive with a 120-foot right-of-way between Shaw Avenue and Boy Scout Road, three miles used by walkers, joggers and cyclists.
  - c. McKenzie Avenue abandoned railroad right-of-way, a designated bikeway between Barton Avenue and Clovis Avenue, two and three-quarters miles, used also by walkers, joggers and cyclists.
  - d. West Kearney Boulevard, a designated scenic drive with a 140-foot to 154-foot right-of-way between Fresno Street and West Lawn Avenue, approximately six miles, used primarily by cyclists.
  - e. Barton Avenue, a designated bikeway between Herndon and Nees Avenues and a PG&E landscaped easement from Bullard Avenue to Palo Alto, approximately two miles, used by walkers, joggers and cyclists.
2. Fancher Creek Trail

The Fancher Creek Trail is the predominate trail being currently used by equestrians within the Southeast



Fresno Community. This trail meanders along Big Dry Creek and connects to a Southern Pacific Railroad spur track along East California Avenue.

Within the Fancher Creek Trail, a segment between East Kings Canyon Road and East California Avenue is posted as a bridle path. Staging facilities serving this trail are located west of South Temperance Avenue north of East California Avenue and west of South Clovis Avenue and south of East California Avenue.

### 3. Historical Walking Tours

The Fresno City and County Historical Society in conjunction with the Fresno County and City Chamber of Commerce and the William Saroyan Festival committee have prepared self-guided walking tour brochures within Fresno's central area. An Art and History Tour on the Fresno Downtown Mall is also being planned and will be developed as an annual organized event.

These walking tours focus on numerous buildings, structures and residences which are of historic and cultural significance such as the Fresno Water Tower and the Meux Home. (See Appendix for Walking Tour listings).

### 4. Woodward Park Equestrian Area

The City Council approved the operation of an interim Equestrian Program at Woodward Park in a 60-acre area of the park which is presently undeveloped. The Equestrian Program was developed in association with the Horse Owners For Trails group and includes a staging area and a circular horse trail. The Program is coordinated with the cross-country track program, which also utilizes this area of the park, to reduce conflicts between equestrians and runners to a minimum. When the Big Dry Creek Reservoir Equestrian Trail is completed, the Woodward equestrian trail would be abandoned; and as funds become available, the area would be developed to provide additional picnic shelters and parking as identified in the Woodward Park Master Plan.

## 4.2 Potential Trail Corridors

### 1. Canal Banks

The Enterprise Canal, Big Dry Creek, Herndon Canal, Mill Ditch, and Fancher Creek provide an open space network throughout the Fresno-Clovis Metropolitan Area. With careful planning, the canal banks could provide the



public with a developed open space trail system which would link potential trail corridors establishing continuous green-belts. To accommodate a multi-purpose trail use for hikers, walkers, joggers, cyclists, equestrians and the physically disabled, canal banks should provide a 20-foot minimum right-of-way with AC paving and a dirt surface. The width of the paved area would usually be eight feet, but may depend on whether the bike trail is designed for one or two-way use, and how heavily the trail would be used by the physically disabled. Reserving a 12-foot-wide concrete paved area would best accommodate both users. (See Appendix). Currently, canal banks are used by joggers; cyclists with mountain bikes; senior citizens walking for exercise; children going to and from school; and equestrians such as the Jensen's Armstrong Stables located east of Fruit Avenue south of the Herndon Canal.

Not every canal may require a 20-foot corridor nor do all uses need to exist on both sides. Leaving canal banks in their existing condition is a viable alternative in many instances, with assurances from the Fresno Irrigation District that banks will be available for public use.

While canal banks constitute the most important resource for trails in the urban area, there are many obstacles which must be overcome, including the issue of liability, the need for fencing along the canal banks, and treatment where canals cross major streets.

## 2. Utility Power Line Alignments

Pacific Gas and Electric transmission tower alignments provide linear corridors through the West Bullard Community Plan Area which are partially landscaped and used by joggers, walkers and cyclists.

These PG&E transmission tower alignments/easements could provide linkage with other multi-purpose trail corridors or to open space park facilities. In order to accomplish these linear residential subdivision tract maps adjoining the PG&E easements must be conditioned/required to dedicate rights-of-way which lead to designated trail corridors. Further, residential or commercial developments could be required to develop landscaped trail corridors along the transmission tower easements which would meet the needs of trail users and address access or maintenance concern of PG&E staff.

## 3. Railroad Rights-Of-Way



POTENTIAL TRAIL CORRIDORS

The Southern Pacific Transportation Company and the Atchison, Topeka and Santa Fe Railway are the two major railroad companies operating in the Fresno-Clovis Metropolitan Area. The rail networks of these two railroad companies provide linear corridors which could be developed into multi-purpose trails and also provide linkage to a metropolitan trail system. However, the Atchison, Topeka & Santa Fe Railway's decision to reject plans for a joint trackage agreement with the Southern Pacific Transportation Company lessens the short-range possibility of converting abandoned Santa Fe Railroad tracks into multi-purpose trail corridors within the Fresno Metropolitan Area.

#### 4. Regional Parks

Three regional parks serve the Fresno-Clovis Metropolitan Area. They are: Roeding Park; Kearney Park; and Woodward Park. These regional parks offer non-programmed nature oriented recreational opportunities, and are improved with picnic shelters, public gardens, hiking/running trails, streams, lakes and with an interim equestrian trail at Woodward Park.

The three existing regional parks along with any future regional parks to be developed in the Bullard (Northwest Fresno) West (West Fresno) and the Roosevelt (Southeast Fresno) community planning areas, could provide key trail linkage and staging facilities (i.e. restrooms, rest areas, stables, food/water, and trail route information).

#### 5. Major Streets, Highway Corridors

The emphasis of utilizing major streets and or highway corridors focuses on the recreational usage and not specifically for trip destination purposes. Major streets are also important to provide linkages between components of the trail system.

#### 4.3 Recommended Trail Components

The recommended trail components are shown in Figure 1 and include both existing and future trail corridors. The corridors consist of proposed multi-purpose trails as well as trail components intended for single purpose use.

The multi-purpose trails as identified in this Manual propose potential trail use by equestrians, hikers, joggers, cyclists, and the physically disabled all in one minimum 20-foot trail corridor. Separate facilities would include a paved surface for cyclists and



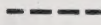
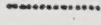
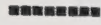


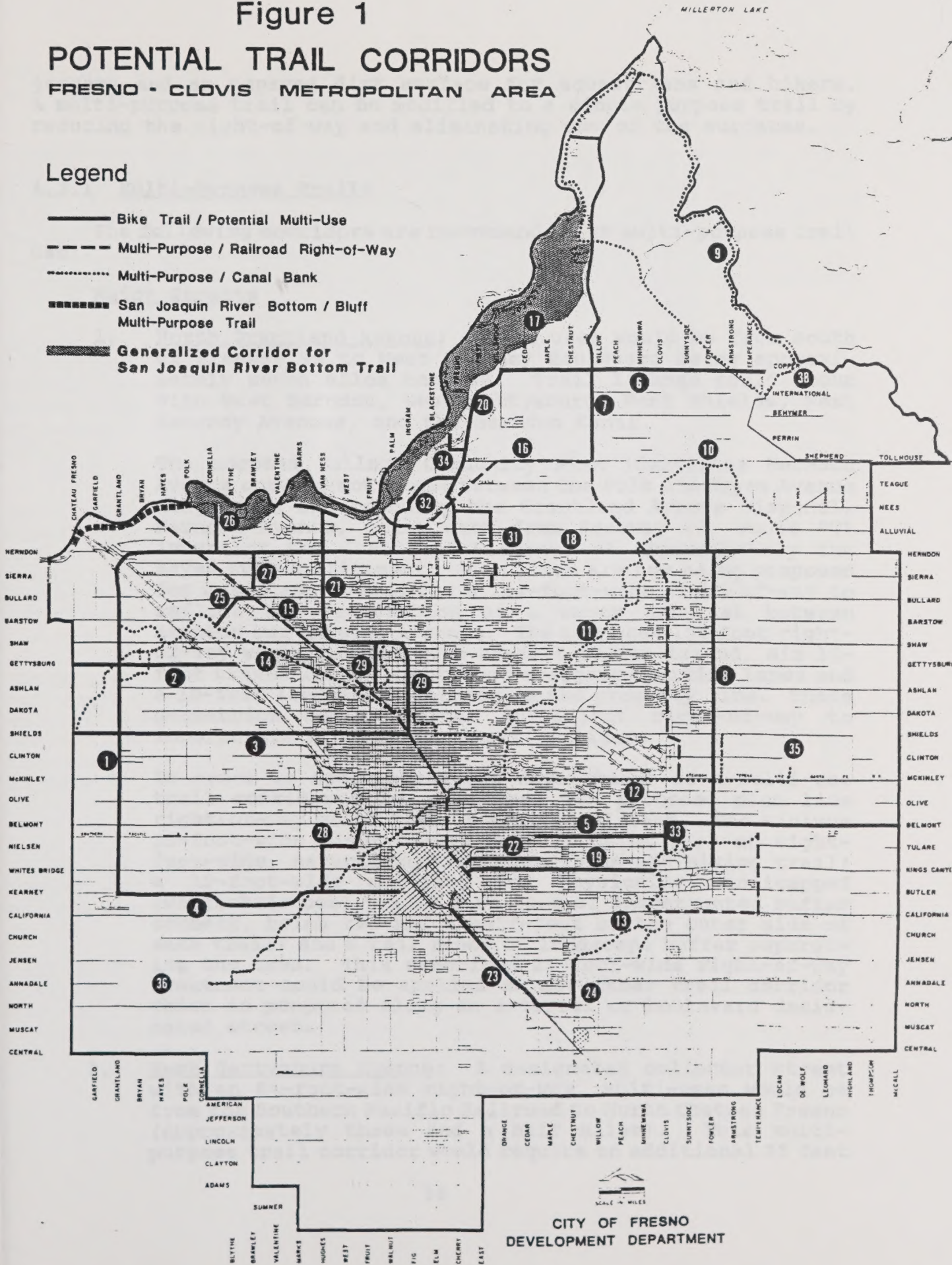


# Figure 1

## POTENTIAL TRAIL CORRIDORS FRESNO - CLOVIS METROPOLITAN AREA

### Legend

-  Bike Trail / Potential Multi-Use
-  Multi-Purpose / Railroad Right-of-Way
-  Multi-Purpose / Canal Bank
-  San Joaquin River Bottom / Bluff Multi-Purpose Trail
-  Generalized Corridor for San Joaquin River Bottom Trail









joggers and an unpaved dirt surface for equestrians and hikers. A multi-purpose trail can be modified to a single purpose trail by reducing the right-of-way and eliminating one of the surfaces.

#### 4.3.1 Multi-Purpose Trails

The following corridors are recommended for multi-purpose trail use:

##### Major Streets

1. North Grantland Avenue: Multi uses would be from south of Freeway 99 to West Kearney Boulevard being approximately seven miles one-way. Trail linkage could occur with West Herndon, West Gettysburg, West Shields, West Kearney Avenues, and the Herndon Canal.

The adopted Bullard Community Plan identifies Herndon Avenue curving southwest between the Polk and Hayes Avenue alignments and becoming the Grantland Avenue Diagonal. Herndon Avenue, going east from Freeway 99, would "T" intersect the Grantland Diagonal at approximately the Hayes Avenue alignment. Plan lines are now being proposed for Grantland Avenue for a 134-foot-wide right-of-way to reflect the designation as a super arterial between Herndon and Shields Avenues. The proposed 134 foot right-of-way would consist of a 26-foot median island, six 12-foot travel lanes, eight-foot emergency parking lanes and a 10-foot landscaped setback to the property line. These geometrics do not allow sufficient right-of-way to incorporate a multi-use trail corridor.

In order to accommodate the development of a multi-use trail corridor along Grantland the proposed plan line right-of-way would need 15 additional feet. The minimum 25-foot-wide right-of-way would consist of: an eight-foot-wide, natural surface equestrian and hiking trail; a 12-foot-wide cyclists and physically handicapped (wheelchair use) trail; five feet of unobstructed buffer setback, being two and a half-feet on the outer side of each trail; and a rail fence or landscape buffer separating the uses. This described 25-foot-wide right-of-way treatment could be applied on any other trail corridor which is proposed along an arterial or boulevard designated street.

2. West Gettysburg Avenue: A designated collector street with an 84-foot-wide right-of-way, multi-uses would be from the Southern Pacific Railroad to North Chateau Fresno (approximately three and a half miles). This multi-purpose trail corridor would require an additional 25 feet



of right-of-way in addition to the planned 84-foot-wide right-of-way. Trail linkage could occur with the Herndon Canal and North Grantland Avenue.

3. West Shields Avenue: Multi-uses would be from Chateau Fresno to the Santa Fe Railroad tracks (approximately seven and a half miles). This multi-purpose trail corridor would require a minimum 25-foot-wide right-of-way, being an additional 15 feet in width to the proposed 134-foot-wide planned line. Trail linkage could occur with North Grantland/North Wilson Avenues, the Herndon Canal and the Santa Fe Railroad right-of-way.
4. West Kearney Boulevard: Multi-uses would be from North Grantland Avenue to Fresno Street (approximately six miles). This multi-purpose trail corridor would require a minimum 25-foot-wide right-of-way, which would have to be integrated with the existing 140 to 150-foot-wide right-of-way. Trail linkage could occur with North Grantland/North Hughes Avenues and the Big Dry Creek.
5. East McKenzie Avenue Alignment: An abandoned railroad spur track and an existing bikeway between North Barton and North Clovis Avenues (approximately two and three quarter miles). The existing right-of-way ranges between 25 and 80 feet in width and would be sufficient to support a multi-purpose corridor. Trail linkage could occur with the Fancher Creek Canal.
6. East Copper Avenue: Multi-uses would be between North Millbrook Avenue and the Locan Avenue alignment (approximately six miles) and linking with the proposed 10-mile loop trail in the area of the Little Dry Creek Flood Control Reservoir; this multi-purpose trail corridor would require a minimum 25-foot-wide right-of-way. A staging area should be developed at Copper and Willow.
7. North Willow Avenue: Multi-uses would be from Shepherd Avenue to the Friant Community (approximately two miles) and would require a minimum 25-foot-wide right-of-way; trail linkage could occur with East Copper Avenue and the Southern Pacific Railroad right-of-way.
8. North Fowler Avenue: Multi-uses would be from East Shepherd Avenue to East Kings Canyon Road (approximately nine miles), requiring a minimum 25-foot-wide right-of-way and would provide linkage to the Enterprise Canal, Big Dry Creek, East Herndon Avenue, Mill Ditch and the Fancher Creek trail corridors.



## Canal Banks

Multi-purpose uses within the Fresno-Clovis Metro Area canal system could consist of equestrians, cyclists, hikers, walkers, joggers, and the physically disabled. In order to safely accommodate the physically disabled the trail corridor must be developed with a combination of a dirt surface and AC Paving. However, if bicycle use is limited to mountain bikes along canal banks, then the width of the concrete area could be reduced to a four to six-foot-width instead of 12 feet, thereby also reducing construction cost (refer to Section VI, Trail Costs Options)

### 1. The Big Dry Creek Reservoir Trail

The Big Dry Creek Reservoir Trail is a proposal by the Fresno Metropolitan Flood Control District in conjunction with the Fresno City Parks, Recreation and Community Services Department staff. The trail would consist of a 10-mile-loop, which would connect the Big Dry Creek Reservoir with Friant, using the rights-of-way of the Big Dry Creek Diversion channel, the Friant-Kern Canal and the San Joaquin River (see Appendix). Development of this trail would require coordination with The U.S. Bureau of Reclamation, who has fee ownership rights of the Friant-Kern Canal; the Friant Water Users Authority, who operates and maintains the canal; the Fresno Metropolitan Flood Control District who has an easement for the operations and maintenance of the Little Diverson Channel; private property owners and the State of California who have ownership interests along the San Joaquin River. This 10-mile-loop equestrian trail could also be used for multi-purpose uses with a minimum 20-foot right-of-way linking with the proposed San Joaquin River Trail. The Friant Water Users Authority has indicated that portions of the Friant-Kern canal right-of-way is developed with a 12-foot-wide asphalt paved road.

### 2. The Enterprise Canal/Dry Creek (City of Clovis)

The City of Clovis Herndon-Shepherd specific plan proposes a multi-use trail along the banks of Big Dry Creek and the Enterprise Canal. The plan proposes a greenbelt along the creek and canal being between 50 and 70-feet-wide. This trail would meander approximately six miles one way from East Herndon Avenue near the North DeWolf Avenue alignment, then north-westerly to the intersection of East Shepherd and North Sunnyside Avenue and then meander in a south-westerly direction near the intersection of East Herndon and North Minnewawa Avenues. Trail linkage could occur with North Fowler Avenue, and the Southern Pacific Railroad.



### 3. Big Dry Creek

Big Dry Creek traverses the Cities of Clovis and Fresno in a southwesterly direction from the intersection of Herndon and Minnewawa Avenues to the intersection of Hughes and Kearney Avenues (approximately 12 miles) on a 20-foot-wide minimum right-of-way. Multi-uses could occur along this trail with linkage to the Herndon Canal, Mill Ditch, the Santa Fe Railroad, and Kearney Boulevard.

The Fresno Metropolitan Flood Control District and the California Department of Transportation are currently discussing the possibility of developing a linear, greenbelt floodway along Dry Creek between East Shaw and East Ashlan Avenues. Development of this mile segment may occur as a result of the re-alignment/construction of Freeway 168 (see Appendix). Staging areas offering rest stop facilities to trail users could be developed along three nine-mile intervals or shorter:

- a. Near the vicinity of Herndon and Locan Avenues.
- b. Adjacent to the old Harpain Dairy site, between Ashlan and Dakota Avenues, east of Cedar Avenue. The City of Fresno has designated a 20-acre community park site at this location which could accommodate a staging area.
- c. A staging area at Kearney Park could provide an excellent setting for rest stop facilities.

### 4. Mill Ditch

The Mill Ditch traverses the City of Fresno along McKinley Avenue and adjacent to the Santa Fe railroad between Millbrook and one-quarter-mile east of Fowler Avenues to Shields Avenue (approximately six miles). Multi-uses could occur along this right-of-way with linkage to Big Dry Creek, the Herndon Canal, the Southern Pacific Railroad and North Fowler Avenue. Staging areas could be at:

- a. The vicinity of Shields and Fowler Avenues.
- b. Near or at Fresno City College.

### 5. Fancher Creek

Fancher Creek is located southeast of the Fresno-Clovis Metropolitan Area meandering in a southwesterly direction from Tulare and Temperance Avenues to the intersection of Jensen and Chestnut Avenues (approximately five and



one-half miles). Multi-uses could occur along this right-of-way with linkage to the Southern Pacific Railroad, Fowler, Chestnut and Temperance Avenues and Kings Canyon Road. Staging areas which are currently being used by equestrians are located at:

- a. West of Temperance Avenue, north of California Avenue.
- b. West of Clovis Avenue and south of California Avenue.

6. Herndon Canal

The Herndon Canal traverses the City of Fresno in a north-westerly direction from McKinley, Millbrook and Shields Avenues through Highway City to the intersection of Shields and Chateau Fresno (approximately 12 miles). Multi-uses could occur along this right-of-way with linkage to Big Dry Creek, Mill Ditch, Santa Fe Railroad, Arthur, Wilson, Salinas, Grantland, Gettysburg, and Shields Avenues. Staging areas could be at:

- a. The Jensen's Armstrong Stables near Fruit Avenue.
- b. Near the Sports West Baseball Complex in Highway City.
- c. The intersection of Shields and Chateau Fresno Avenues.

Railroad Rights-Of-Way

Railroad rights-of-way within the Fresno-Clovis Metropolitan Area consists of rail corridors which primarily serve freight transportation. The Southern Pacific Railroad and the Santa Fe Railroad companies could provide an integral linkage to a viable multi-purpose trails network through their vastly under-utilized rights-of-way. Maximum utilization of these rights-of-way will require a relentless political commitment from local, state and federal legislators to convince the Federal Interstate Commerce Commission and/or the railroad companies that rail merger and/or consolidation is a community priority which could foster the public's health, safety and welfare through the use of abandoned railroad lines for recreational trail corridors.

1. Atchison Topeka/Santa Fe Railroad

This railroad line traverses the City of Fresno in a southeasterly direction from the San Joaquin River to Fresno's Central Area (approximately 11 miles). Multi-uses could occur along this right-of-way, using a minimum 20-foot-wide right-of-way with linkage to the San Joaquin



Riverbottom, Herndon, Shields, Arthur, Wilson, Brawley and Bullard Avenues, Kings Canyon Road, the Herndon Canal and Big Dry Creek. Staging areas could be at:

- a. The vicinity of the Riverside Golf Course and/or the proposed Underdown Park site.
- b. Jensen's Armstrong Stables near Fruit Avenue.
- c. A site to be designated in the Central Area.

## 2. The Southern Pacific Railroad

The Southern Pacific Railroad line recommended for a trail corridor is the spur track running from Pinedale northeast to Shepherd Avenue to the Willow Avenue alignment then proceeding southeast through the city of Clovis and east of Clovis Avenue to McKinley Avenue. This spur track is approximately 11 and 1/2 miles long. Multi-uses could occur along this right-of-way, using a minimum 20-foot right-of-way with linkage to Friant Road, Willow, Herndon and Clovis Avenues, Mill Ditch and Big Dry Creek. Staging areas could be at:

- a. The southern end of Riverview estates between the extension of Ingram and Palm Avenues being a vista point and a proposed 5-acre park site (see Appendix).
- b. The vicinity of Herndon and Minnewawa Avenues.
- c. The vicinity of Clovis and Shields Avenues or McKinley Avenues.

## 3. The San Joaquin Riverbottom

The San Joaquin River and its environs are acknowledged as the backbone to any potential trail corridor system within the Fresno-Clovis Metropolitan Area. To date, all planning efforts (i.e. Bullard/Woodward Park Community plans, San Joaquin Bluffs Environs Specific Plan repealed on 1/24/89, the San Joaquin River Parkway and Environs Conceptual Plan) have been conceptual in nature lacking specific plan line trail alignment recommendations. Although this manual provides trail design/construction standards which will assist in the development of a riverbottom/bluff trail, it still lacks the level of specificity needed to establish specific plan line alternatives on which engineering studies can be made to determine preferred exact trail alignments. Hopefully, a multi-jurisdictional specific plan will follow this planning effort to obtain plan line information. In the interim, this manual identifies the potential trail



corridor alignments offered by the San Joaquin Parkway "Conceptual Plan" and the San Joaquin Bluffs Environs Specific Plan. A combination of these two efforts may provide the necessary catalyst to commence specific plan line engineering studies (see Appendix).

The City should support federal legislation to determine the feasibility of designating a 106-mile trail along the San Joaquin River from State Highway 145 to Devil's Postpile National Monument as a Scenic Trail within the National Trails System. Such a trail would be of national significance and would enhance the value of the metropolitan trail system as perceived by the general public.

Specifically, this would mean adding the following paragraph to Section 5(c) of the National Trails System Act (16 USC 1241-1249), Public Law 90-543 (Oct. 2, 1968):

San Joaquin River Trail, extending approximately 106 miles along the San Joaquin River from State Highway 145 to Devil's Postpile National Monument.

The National Park Service or Forest Service would become the lead agency for purposes of determining the feasibility of designating the San Joaquin Trail. The lead agency has three years to report to Congress, and Congress has three years to act on designation thereafter.

The proposed San Joaquin River Trail would present remarkable outdoor recreation opportunities through rural, urban, riverine, and mountain landscapes from the Valley floor to the crest of the Sierra Nevada. Under the authorizing legislation the proposed San Joaquin River Trail could incorporate a canoe trail from State Highway 145 to Freeway 99; a multi-purpose hiking, bicycling, and equestrian trail in the proposed San Joaquin River Parkway from Freeway 99 to Millerton Lake State Recreation Area; and a hiking-equestrian trail from Millerton to Devil's Postpile National Monument.

Two important components of the San Joaquin Riverbottom trail system have been recently approved.

- a. Millerton Lake State Recreation Area to Fresno County's Lost Lake Recreation Area Trail Link

The State of California has appropriated \$500,000 for the State Department of Parks and Recreation to plan and develop a trail linking Millerton Lake State Recreation Area and Fresno County's Lost Lake Recreation Area. According to the California State Trails coordinator,



plans and specifications for the Trail's development will be the responsibility of the State Architect's office.

- b. Riverside Trail, Woodward Park to the San Joaquin River

The City has received a \$120,000 grant to construct an approximate 3/4 mile trail from the bluffs within Woodward Park to a 3-acre City-owned site along the San Joaquin River.

Multi-uses could occur using a minimum 20-foot-wide right-of-way from Freeway 99 to Millerton Lake State Recreation Area (approximately 20 miles) with linkage to the Santa Fe Railroad, Milburn, Friant, Van Ness Boulevard, Grantland and Herndon Avenues. Staging areas could be at:

- a. The vicinity of the Riverside Golf Course and/or the proposed Underdown Parksite.
- b. The vicinity of the San Joaquin and/or the Fig Garden Golf Course.
- c. The southern end of Riverview Estates between the extension of Ingram and Palm Avenues being a vista point and a proposed 5-acre park site.
- d. The Woodward Park, Riverside Trail rest area (see San Joaquin Bluffs Environs Specific Plan Open Space and Public Facilities Element Map).

#### 4.3.2 Single/Limited Use Trail Corridors

The focus of this manual is the multi-use of existing and future trail corridors. Some major streets, however, may be limited in use due to hazards associated with high traffic volumes and the build out of adjoining properties. The following streets reflect the conditions described:

1. Herndon Avenue, a designated expressway with average daily traffic volumes near First Avenue of 47,000 A.D.T. which exceeds the 30,000 A.D.T. capacity. Herndon could be limited to bicycles, with limited pedestrian and jogger use.
2. East Kings Canyon Road, a designated arterial with average daily traffic volumes at the intersection of Cedar of 25,000 A.D.T., is close to exceeding the 28,000 A.D.T. capacity, and could be limited to bicycles, with limited pedestrian and jogger use.



The following major and local streets have the potential of accommodating joggers, hikers, walkers, cyclists, and the physically disabled. However, equestrian use would not be encouraged due to safety considerations.

1. North Friant Road/Audubon Drive/North Fresno Street: Trail use would be within the existing and or planned right-of-way between Herndon and Copper Avenues (approximately five miles). Trail linkage could occur with the San Joaquin Riverbottom trail and the two boundary streets.
2. North Van Ness Boulevard/Boy Scout Road: Trail use would be from Shaw Avenue to Boy Scout Island via Boy Scout Road (approximately three miles), within the existing right-of-way. Trail linkage could occur with West Herndon Avenue and the San Joaquin Riverbottom trail.
3. East Huntington Boulevard: Trail use would be between Freeway 41 and Cedar Avenue within the existing right-of-way (approximately one and one-quarter miles). Trail linkage could occur with East Kings Canyon Road.
4. Golden State Boulevard: Trail use would be within the existing right-of-way between California and North Avenues (approximately two miles). Trail linkage could occur with North Avenue.
5. East North Avenue/North Chestnut Avenue: Trail use would be within the existing/and or planned right-of-way between Golden State Boulevard to the west and Jensen Avenue to the north (approximately one and three-quarters miles). Trail linkage could occur with Fancher Creek.
6. North Salinas Avenue: Trail use would be within the existing right-of-way between Bullard Avenue and the Herndon Canal (approximately three-quarters mile). Trail linkage could occur with the Herndon Canal and the Santa Fe Railroad.
7. West Bullard Avenue: Trail use would be within the existing right-of-way between the Salinas Avenue alignment and Brawley Avenue (approximately one-quarter mile). Trail linkage could occur with the Santa Fe Railroad right-of-way.
8. North Brawley Avenue: Trail use would be within the existing right-of-way between Bullard and Herndon Avenues (one mile). Trail linkage could be with West Herndon Avenue and the Santa Fe Railroad right-of-way.



9. South Hughes/West Nielsen Avenues: Trail use would be within existing/planned rights-of-way north of Kearney Boulevard to Teilman Avenue (approximately two miles). Trail linkage could occur with Big Dry Creek and Roeding Park through North Pacifica Street.
10. North Wilson Avenue: Trail use would be within the existing right-of-way between Shaw and Shields Avenues (two miles). Trail linkage could occur with West Shields Avenue, the Herndon Canal and Santa Fe Railroad right-of-way.
11. North Arthur Avenue: Trail use would be within the existing right-of-way between Shaw and Ashlan Avenues (one mile). Trail linkage could occur with the Santa Fe Railroad right-of-way and the Herndon Canal.
12. North Bond Avenue: Trail use would be within the existing right-of-way between Bullard and Nees Avenues (approximately one and one-half miles). Trail linkage could occur with Herndon Avenue.
13. Milburn Avenue: Trail use would be along the new alignment of Milburn from Herndon Avenue to the San Joaquin Riverbottom at the proposed underdown park site (one and one-half miles).
14. Audubon Drive/Palm/Harrison: Trail use would be along the future extension of Palm north from Herndon linking with Harrison Avenue to the riverbottom and Audubon Drive west of Highway 41. (two miles) Trail linkages would also occur with the Southern Pacific Railroad corridor in Pinedale.

#### 4.3.3 Publicly Owned Trail Development Areas

Lands currently under public ownership have potential for on-site trail development. Several parcels are large enough to develop an enclosed trail system with potential ties to other trail components. Examples include:

1. Red Bank Detention Basin: This 170-acre detention basin to be constructed as part of the Big Dry Creek project is planned as a regional park within the City's master park plan. Located near Clinton and Locan, this parcel could be developed with an equestrian and hiking trail system.
2. Fresno Wastewater Treatment Facility: The wastewater treatment ponding area covers several hundred acres at Jensen and Grantland. The ponds are visited by many



species of water fowl and the Audubon Society conducts an annual count there. A trail system could be developed to encircle the ponds and connect with the Grantland corridor to Kearney Park and with the Dry Creek canal.

3. FMFCD Basins: FMFCD basins are generally 15-20 acres in size and planned for secondary use for recreation. The basin at Barstow and Forkner is planned for park development with a paved walking path.
4. Big Creek Reservoir: This 350-acre detention basin is also part of the Big Dry Creek project and will have recreation facilities developed by the FMFCD. This recreation area could serve as a staging area for the Big Dry Creek Reservoir trail.



## CHAPTER 5

### TRAIL DESIGN, ACCESS AND CONSTRUCTION STANDARDS

Trail design and development standards for the recreational use of hikers, cyclists, runners, and equestrians vary from jurisdiction to jurisdiction. The following examples serve as guidelines in trail development for the Fresno Metropolitan area.

#### 5.1 Trail Design Standards

1. Design trails to require as little maintenance as possible over the long run.
2. Avoid structures; where structures are necessary, design them to blend with surroundings.
3. Use signing sparingly with design shaped to blend with surroundings. Signage may consist of trailhead signs which provide a location map of the trail, trail rules, and destinations, directional signs, and warning signs of hazardous conditions on the trail.

Wooden signs should be used as they are most compatible with the natural environment.

On bicycle routes, signing should be placed to provide safe stopping or turning distance. Height of signs would be determined by vegetation and other surroundings, but 40" from ground to bottom of a double sign is recommended.

4. Where a trail corridor accommodates hikers and/or equestrians in addition to bicyclists, separate paths should be provided for hikers and equestrians.
5. Acquire enough land to provide scenic amenities and a buffer zone between the trail and adjacent lands.
6. Temporary route flagging shall be done with removable plastic ribbon and/or marked stakes prior to construction and shall be removed upon completion.
7. Machine construction of trails is the preferred method. Trails should be constructed by hand in sensitive environmental areas.
8. Grades should be held to a minimum. Grades of 10 percent or less are desirable; grades may be as great as 15 percent, but should be avoided or kept as short as possible.



9. The tread width should be determined by amount and intensity of use as well as topography and vegetation. Tread width should be about 3-4 feet wide for a hiking trail. The tread may be narrower if necessary, but under no circumstances less than 1 foot 6 inches. If the tread is narrow, occasional passing areas may be provided at places with gentle slopes.

Make transitions on all cuts so that the trail will be molded into the terrain. Also, a berm of earth, rock, or wood on the outside edge of the trail may be necessary. Steep areas may be handled by terracing or building steps. These must be reinforced with stone or wood.

10. Vegetation should be preserved as much as possible to protect the aesthetic quality of the trail. Vegetation should be cleared both vertically and horizontally to allow safe passage in keeping with the type of trail and the existing environment. Pruning along trails should be selective. Dead and dying limbs and snags which may fall on the trail should be removed. Ground cover plants and low shrubs should not be cleared except from the actual tread.

Vegetation should be allowed to return to cut slopes to increase stability. Where appropriate, any replanting should be in conformance with land use development plans of individual parks and vegetation management plans. Replant areas with vegetation indigenous to those areas or compatible with plantings already in place.

11. Drainage is an important item in trail construction. The method used to drain the tread will depend on the quantity and speed of water and the type of soils in the area. Minor rivulets crossing the trail tread can be directed along a water bar. Trails crossing larger streams will require a culvert. If a culvert is used, it is very important to prevent erosion at the outfall by providing rip-rap or other hard surface for the water to hit first.
12. The trail may be treated or surfaced in areas where dust caused by trail use presents a problem; surfacing is needed to prevent erosion; or it is needed to improve slick or muddy conditions. The color and composition of material shall be compatible with the environment through which the trail passes.
13. If possible, structures such as culverts, retaining walls, and bridges should be avoided because of their high installation and maintenance cost. Ideally, trail structures should be built using on-site materials or



imported materials which blend into the environment. Bridges should be 4 feet wide or wider on a riding trail, and may be as narrow as 2 feet on a hiking trail. Fill over culverts should be a minimum of 4 feet wide.

14. Fencing may be necessary on some trails to prevent trespassing on adjacent lands or to protect the user from a dangerous area. Some of these problems may be avoided by selective location of the trail route, but there will be cases where fencing is the only solution.

Wire gates or metal pipe gates may be installed in the fence line to allow access into the trail corridor for the convenience of grazing tenants, adjoining property owners, or fire and service vehicles.

15. Gates should be avoided whenever possible through careful routing, fencing or use of stiles. Gates for trail users are 4 to 5 feet wide and must be self-closing. Gates on service trails should be 14 feet wide to accommodate fire trucks.
16. The physically disabled could utilize smooth surfaces provided for bicycle and service trails. A 10 to 12-foot-wide concrete paved area would best meet this need. Where this type of use is planned, design of bollards should include the needs of the handicapped.
17. Staging areas should accommodate the amount and type of traffic the trail demands. If a trail is used only by small groups of hikers, a staging area to hold a half-dozen cars may be adequate. If the trail receives heavy use by large groups of horsemen, a staging area to accommodate up to 50 trucks and trailers may be considered. Staging areas should not duplicate existing facilities; where there is an existing parking area, it should be used. Facilities which should be provided at staging areas include trail signs, toilets, water, and garbage cans. Generally, staging areas at 10-mile intervals are adequate; they may be closer than that if the trail is used primarily by hikers; shorter segments of the trail are especially scenic and generate additional traffic; or any place the use seems to demand additional staging. Equestrian staging areas should be unpaved.
18. Barriers to prevent horse riders from using a hiking only trail may include fences, stiles, and natural barriers such as fallen trees or low branches. Placing a barrier at the entrance or leaving fallen logs on the trail can also discourage motorcyclists use of hiking/riding trails.



Bollards can be used to prevent motorcycles or automobiles from entering a bike path, as well as slowing cyclist when approaching an intersection.

Barriers or fences may be used on bike paths to separate cyclists from an adjacent hazard or to prevent motorcycles or automobiles from entering the path. Fences or barriers along the edge of a bike path should be set back a minimum of 2 feet from the edge of the pavement. If barriers are required on both sides, they should be at least 12 feet apart to allow passing room and space for service vehicles. Fences must be at least 4 feet high because the cyclist has a high center of gravity; a lower barrier would not prevent a cyclist from falling over it.

19. Access points and parking lots which are accessible to vehicles after dusk must be lit to a minimum lighting level of one foot candle per square foot of surface. All lighting shall be directed away from residential areas and public streets so as not to produce a glare as seen from such areas in order to ensure the general safety of other vehicular traffic and the privacy and well being of the residential areas.
20. A 10-foot minimum landscaped setback shall be provided along major streets between the property line and the inner edge of a proposed trail corridor.
21. Precautions must be taken to assure that drainage structures do not obstruct the path of bicyclists. Grate structures that consist of bars running parallel to the curb can easily entrap a narrow bicycle wheel. These parallel bar grates must be replaced with those designed to allow bicyclists to cross safely. Acceptable designs include grates with bars perpendicular to the curb, zig-zagging bar grates, diagonal bar grates, or the existing parallel bar grates with cross strips welded on. Any design must not substantially reduce the ability of the inlet to intercept water.

## 5.2 Bicycle Trail Design Standards

Recreational bicycle trails will attract a variety of users. Not all cyclists can be accommodated on every trail; some trails will be suited for mountain bikes, such as the San Joaquin River-bottom, railroad rights-of-way, and canal banks. Others will be more suited for long distances tours, such as major street trail alignments.



### 5.2.1 Bikeway Design Guidelines

The following guidelines are a synopsis of the bikeway design standards used by Caltrans. Bike Paths/Trails will have to meet these guidelines to be eligible for State and Federal development funds. More specific details are available in the Caltrans Highway Design Standards Manual.

#### CLASS I BIKEWAYS

Class I bikeways (bicycle paths) are facilities with exclusive right-of-way and restrictions on crossings by motorized vehicles. Class I bikeways are frequently shared with pedestrians. However, if pedestrian activity is significant, separate facilities for pedestrians are necessary to minimize conflicts. Motorized vehicles are not permitted on Class I bikeways except for maintenance.

##### 1. Widths

The minimum paved width for a two-way bicycle path shall be eight feet. Widths of 10 to 12 feet are desirable. The minimum paved width for a one-way bicycle path shall be five feet.

A minimum two-foot-wide graded shoulder area shall be provided adjacent to the pavement. A three-foot graded area is preferred.

In areas of intense pedestrian activity, or high bicycle volumes, two-way bicycle path widths of more than 12 feet may be necessary.

##### 2. Signing and Striping

Bikeway signing shall conform to Part IX of the Manual on Uniform Traffic Control Devices (MUTCD).

A four-inch wide yellow centerline stripe may be used to separate opposing directions of travel. This practice is desirable on high volume bikeways, on sections of bikeway with restricted sight distance, and on unlighted bikeways commonly used at night.

##### 3. Intersections with Highways

Where motor vehicle cross traffic and bicycle traffic are heavy, grade separations are desirable to eliminate conflicts. Where grade separations are not feasible, a traffic signal should be considered. Where traffic is not heavy, stop or yield signs on the bicycle path should be used.



4. Separation Between Bicycle Paths and Highways

The minimum separation between the edge of a bicycle path and the traveled way on a highway shall be at least five feet. A distance of 10 feet is desirable to prevent water splashing from passing motor vehicles.

Bicycle paths closer than five feet from the edge of the traveled way must include a physical barrier to prevent bicyclists from encroaching on the highway.

5. Design Speed

The minimum design speed for bicycle paths should be 20 miles per hour. On bicycle paths with down grades steeper than four percent for a distance of 500 feet or more, a 30 mile per hour design speed is recommended.

6. Structural Section

Asphaltic bikeway pavement sections consist of three to six inches of asphalt concrete on a compacted subgrade, or two to three inches of asphalt concrete on a three to four-inch aggregate or stabilized base with a compacted subgrade.

7. Barrier Posts

Barrier posts are sometimes necessary to prevent motor vehicles from entering a bicycle path. The minimum spacing between posts shall be five feet to provide for adult three-wheeled bicycles and bicycle towed trailers.

**CLASS II BIKEWAYS**

Class II bikeways (bicycle lanes) for preferential use by bicycles are established within the paved area of highways. In all cases, bicycle lanes shall be one-way facilities. Two-way bicycle lanes are not permitted.

1. Widths

Bicycle lanes located between parking and motor vehicle travel lanes shall be a minimum of five feet wide. A four-inch solid white edge line should be used to delineate the right-of-way for the bicycle lane. Bicycle lanes shall not be placed between the parking area and the curb.



One-way bicycle lanes located on streets or highways without parking shall be a minimum of four feet wide, including gutter width if curbing is present.

2. Striping and Signing

Bicycle lane signing and striping shall conform to Part IX of the Manual on Uniform Traffic Control Devices (MUTCD).

3. Intersection Design

Treatment of bicycle lanes at intersections shall conform to Part IX of the Manual on Uniform Control Devices (MUTCD).

The minimum width of a bicycle lane approaching an intersection shall be four feet.

The "bike lane" pavement marking shall be used on all bicycle lanes departing an intersection. The "bike lane" pavement marking may be used elsewhere, if required.

### CLASS III BIKEWAYS

Class III bikeways (bicycle routes) are intended to provide route continuity between existing Class I and Class II bikeways, as well as local service to side destinations. Normally, bicycle routes share the right-most traffic lane with motor vehicles.

1. Width

The right-most traffic lane of a designated bicycle route shall be a minimum of 14 feet in width to allow motor vehicles to pass bicycles on the left without leaving the lane.

2. Signing

Class III bikeways shall be delineated by the "Bike Route" sign using placement standards outlined in Part IX of the MUTCD.

3. Sidewalk Routes

Although bicycle routes on pedestrian sidewalks are not desirable, they are sometimes necessary to provide adequate safety. Bicycle routes on sidewalks should be designated as one-way facilities with a minimum sidewalk width of five feet. A width of eight feet or more may be required where pedestrian activity is significant.



### 5.3 Trail User Access

#### 1. Controlled Public Access - Gating - Police/Fire Protection

The issue of controlled public access through gating concerns all affected property owners along the proposed trail corridors as well as local jurisdictions who will be responsible for their operation and maintenance. At issue is the need to maintain an environment as free of vandalism, criminal activity and vagrants as possible.

The time of opening and closing of trail gates could be addressed in an implementation action of a future trails corridor specific plan. Any recommended time frame should be coordinated with trail user groups, private property owners and with local police and fire departments.

All future gating would be required to have emergency release locking mechanisms which could be unlocked by the police and fire departments. This condition would minimize objections of inaccessibility to emergency service vehicles.

Each Trail Link should be clearly marked with signs. Where the Trail is to be used exclusively by a particular type of user, the trail should be clearly designated and should be equipped with signs or barriers to prevent the entry of incompatible activities.

#### 2. Staging Areas

Within a staging area the following guidelines should apply:

- a. Staging areas should be located at strategic access points along a trail link. If the staging area is situated within a regional park, it should be clustered with other developed recreational facilities. It is preferable to locate staging areas with other recreational facilities whenever possible, as these generally already provide the necessary facilities.
- b. The staging area should be developed with facilities adequate and appropriate for users of the trail link. Developed facilities might include elements such as parking areas, equestrian center, sanitary facilities, drinking fountains, picnic areas, shelters, and trailhead signs.



- c. The staging area, particularly along the San Joaquin Riverbottom, may contain additional facilities not primarily oriented toward trail users, such as fishing areas, or nature study areas, if these facilities do not conflict with the primary purpose and goals of the staging area.
- d. The primary management objectives should be to provide for the needs of the trail users and to serve as an entry point to the trail system. Moreover, within urban areas and especially along the riverbottom/bluff, portions of staging areas can provide some degree of relief from the urban scene by providing a small area of natural quality.
- e. Staging areas should be provided at places with aesthetic qualities. Additional space may be acquired for this purpose, and additional facilities such as trail maps, water, hitching rails, or bicycle racks may be provided.

### 3. Trail Closures

A regional trail may be temporarily closed during construction of the trail; when high fire hazards exist in the area; when a hazardous condition exists on the trail; and during periods of very wet weather.

If a trail is closed for any reason, the trail shall be posted as closed at main entry points, and blocked to use where possible. The safety of the trail users and the long-term adverse effects to the trail shall be considered before reopening the trail.

## 5.4 Right-of-Way Agreements

Local jurisdictions may acquire necessary rights-of-way by purchase of fee title, by easement, or by agreement (use permit, license, contract). Agreements may be recorded. Most acquisitions will be from private owners, and most agreements will be with public agencies.

### 1. Rights-of-way on Publicly Owned Lands

Agreements should be as long term as possible. Revocable permits should be avoided. Where this is not possible, the right to revoke the permit should be available to both parties, upon sixty (60) days written notice. Renewal procedures should be specified. Responsibility for liability resulting from trail activity and use may be assumed by the local jurisdictions. Agreements should



contain minimal restrictions regarding design, construction, and operation of the trail. Reasonable restrictive requirements may include installation of gates, fencing, landscaping, signs, and other minor construction specifications.

Specific right-of-way requirements vary with the type of trail and the topography. Generally, if the public property is a linear space such as a creek or canal, an agreement covering the full corridor width is preferred. If the trail is across open land, a route must be defined, and may be simply a location map attached to the agreement. In the latter case, provisions for necessary minor trail rerouting must be included within the agreement.

## 2. Rights-of-way on Privately Owned Lands

Fee simple is the most desirable form of title for acquisition from private owners. Fee ownership allows management and operating flexibility which may not be guaranteed in easements. The property rights may be acquired by purchase or donation of right-of-way, by dedication of rights-of-way during development, or by condemnation. Donations of right-of-way will be encouraged.



## CHAPTER 6

### TRAIL IMPROVEMENT FINANCING OPTIONS

#### 6.1 Potential Multi-Purpose Trail Development Costs

##### 1. Trail Rights-of-Way/Costs

There are two basic ways for the city to attain trail rights of way. First, and most preferably, the city may require as a condition of development easements or dedications for trails. Secondly, the city may purchase fee title land for trails from private property owners. The first alternative is preferable because the city can attain rights-of-way without cost and can require the developer to improve the portion of the trail system on his property.

##### 2. Implementation Costs

Some of the trails have been designated on privately owned vacant land, such as along Grantland Avenue. In these areas, the city would not normally need to acquire the land. The construction costs would be assumed by the property owner or the developer upon development of the property.

The city would need to pay for implementation costs where trails are designated on: 1) public property or utility and drainage easements, 2) private property which is already developed, 3) undeveloped private property which is unlikely to ever be developed, and 4) undeveloped private property which is unlikely to be developed within the time frame the city wishes to implement a specific trail.

##### 3. Maintenance Costs

Maintenance costs will vary depending on the location and type of trail. Maintenance includes clean up, resurfacing, and structural repairs. The costs of clean up may be kept to a minimum by using available man power such as youth organizations, service clubs, school groups, California Conversation Corps, and court referrals.

While manpower may be available at a low cost, costs are also attached to the supervision of the work. The maintenance of trails will normally be the responsibility of the City. The costs will be paid for by the City and possibly partially covered by maintenance assessment districts.



#### 4. Trail Cost Breakdown

The figures below include major street trail corridor development costs. Most communities which have trail systems assess these costs to property owners upon development through required dedication and improvements. Minus major street projected trail corridor cost, the total would be reduced by \$4,812,500, leaving a total cost of \$8,140,000.

Trail development cost within the San Joaquin River-bottom/Bluffs area has been excluded from the analysis.

The City Public Works Department has estimated a cost of \$250,000 per mile for multi-purpose trail development in the riverbottom. For a more definitive cost estimate, the Public Works Department would require an analysis of future plan lines of the proposed alternative trail alignments and an evaluation of the area's topography.







**Table 6.1**  
**Estimated Multi-Purpose Trail Development Costs**

| <u>Corridor</u>                               | <u>Number<br/>of Miles</u> | <u>Trail<br/>Corridor Cost<sup>1</sup></u> |
|-----------------------------------------------|----------------------------|--------------------------------------------|
| 1. N. Grantland                               | 7.0                        | \$ 770,000                                 |
| 2. W. Gettysburg                              | 3.5                        | 385,000                                    |
| 3. W. Shields                                 | 7.5                        | 825,000                                    |
| 4. W. Kearney                                 | 6.0                        | 660,000                                    |
| 5. E. McKenzie                                | 2.75                       | 302,500                                    |
| 6. E. Copper                                  | 6.0                        | 660,000                                    |
| 7. N. Willow                                  | 2.0                        | 220,000                                    |
| 8. N. Fowler                                  | 9.0                        | 990,000                                    |
| 9. Big Dry Creek Reservoir Trail <sup>2</sup> | 10.0                       | 1,100,000                                  |
| 10. Dry Creek/Enterprise <sup>3</sup>         | 6.0                        | 660,000                                    |
| 11. Big Dry Creek                             | 12.0                       | 1,320,000                                  |
| 12. Mill Ditch                                | 6.0                        | 660,000                                    |
| 13. Fancher Creek                             | 5.5                        | 605,000                                    |
| 14. Herndon Canal                             | 12.0                       | 1,320,000                                  |
| 15. Santa Fe RR                               | 11.0                       | 1,210,000                                  |
| 16. Southern Pacific RR                       | 11.5                       | 1,265,000                                  |
| 17. San Joaquin Riverbottom Trail             | N.A.                       | N.A.                                       |
|                                               |                            | <u>\$12,952,500</u>                        |

<sup>1</sup>The City of Fresno Public Works Department estimated \$110,000 a linear mile for the cost of developing a multi-purpose trail corridor with a minimum 20-foot right-of-way. The \$110,000 per mile cost was said to be a conservative estimate.

<sup>2</sup>This is a multi-jurisdictional trail and the total costs to the City of Fresno are unknown at this time.

<sup>3</sup>Approximately 70% of this trail is within the jurisdiction of the City of Clovis and would be funded by developers or the City of Clovis.

It is general practice to require adjacent developers to construct trail systems along major roadways. Minus major street corridor cost (\$4,812,500) total costs would be \$8,140,000. It has also been suggested by the Citizen's Committee that improvements along canal banks be limited to signage and intersection improvements. This would reduce costs by an estimated \$4,635,000, bringing the total cost to \$3,505,000.

The above analysis reflects trail development cost at present dollars and excludes right-of-way acquisition. The cost for acquiring future trail rights-of-way could be evaluated as part of an action program by a multi-jurisdictional specific plan.







## 6.2 Development and Phasing Assumptions

A total of approximately 117 miles of trail corridors are being proposed by this Manual. Of the total, 41.5 miles are along canal banks, 39 miles are along major streets, 26.5 miles are along railroad rights-of-way and approximately 10 miles are along the San Joaquin River.

Upon adoption of a General Plan Amendment, technical standards and proposed multi-purpose trail corridor alignments will be in place to facilitate the development of a multi-jurisdictional trail development specific plan and the enforcement of trail development conditions for development proposals.

## 6.3 Financing Alternatives

Aside from requiring property owners to construct trails at the time of development, there are numerous financing sources for multi-purpose trails. All local jurisdictions interested in recreational trail development should actively pursue the following sources for the timely implementation of a metropolitan-wide trails system.

### 1. State Bonds

The State of California often places bond issues for park land, open space and trail acquisition before the voters and then administers the use of that money by counties and cities throughout the state. On June 7, 1988, the California Wildlife, Coastal and Park Land Conservation Bond Act of 1988 (Proposition 70) was passed statewide by the voters. Within that Act, \$5 million was allocated for the Trail Grant Program for competitive grants to public agencies and non-profit organizations for acquisition and development of trails. These funds will be appropriated in two fiscal year periods: \$2.5 million in 1989/1990; and \$2.5 million in 1990/1991. The City of Fresno recently obtained a \$120,000 grant from these funds for a nature trail north of Woodward Park.

### 2. Grants

Federal, state and private grants are often made available for parks, open space and trail use where master plans have been adopted. Examples of such grants include: the American Heritage Trust bill (HR 4127-Udall) pending before the Senate, and the Federal Park & Recreation appropriation bill (HR 4867).



3. Federal Land and Water Conservation Fund

Provides fifty-percent matching grants through the state to counties, cities and special districts for acquisition and development projects. The program offers the opportunity to leverage existing local funds, and is a competitive program.

4. State Transportation Development Act

Under Article 3 of the State Transportation Development Act (TDA) certain funds may be made available to counties and cities for facilities for the exclusive use by pedestrians and bicyclists.

5. California Bikeways Act (\$90,000 maximum)

Under this act funds are allocated on an annual basis from the Bike Lane Account (BLA) to cities and counties for improving capacity or safety on existing streets or highways.

6. Special Tax

The State Constitution permits local governments to levy taxes for specific purposes if approved by a two-thirds vote of the electorate. The tax must also be authorized by state law. While cities have a broad choice of taxes which may be used in this manner, counties are much more restricted. A county may, however, use the transient occupancy tax (hotel/motel tax) for general or specific purposes. Some local governments in California earmark this tax or a portion of it for recreation and tourism activities. The County may wish to consider a new kind of broad tax that could raise park revenue with minor impact on any group of taxpayers. Legislative authorization might be required before such a tax could be presented to the voters.

7. Benefit Assessment District

Traditionally, benefit assessment districts have been used to fund specific public works facilities which directly benefit the property assessed and increase its value. Streets, sidewalks, and street lighting are examples of such facilities. Since Proposition 13 was approved, assessments have been authorized by the Legislature for new facilities on a broader scale. In some cases, voter approvals are required which make the assessment differ little from a special tax. But in other cases, a vote is not required unless a certain percentage of affected property owners file protests. Evolution of the law will determine whether a



County-wide benefit assessment to fund trail facilities maintenance and development could be implemented.

Because changes in local government finance mechanisms are continuing, the local jurisdictions should actively keep informed of future funding mechanisms that may be used for trail development.

#### 8. Fund Raising, Donations and Gifts

Local fund raising projects can be utilized to generate moderate sums of money and at the same time maximize citizen involvement. When people personally and knowingly donate time, money, or materials to a project, their personal involvement often goes beyond the original commitment. Fund raising may be on a community-wide basis or on a very localized basis to assist financing of "the" neighborhood trail.

#### 9. Volunteers

Use of volunteers for specific projects may be considered as a separate additional method of financing. Local professionals such as architects, landscape architects, engineers, and developers may be prevailed upon to donate their services to design or develop specific facilities. Further, organizations such as the Boy Scouts, Rotary, Lions, Kiwanis, and the San Joaquin Trail Council can provide funding and/or personnel for special projects.

#### 10. Measure C Funds

Measure C Funds, as approved by Fresno County voters, can be used for trails and bikeways.

#### 11. Joint Participation

The construction of trails is carried out by many agencies in the County such as the City of Fresno, BLM, the Forest Service, and the State Department of Parks and Recreation. Joint trail construction programs will benefit all agencies and reduce duplication of efforts. Participation by other agencies may be limited only to easement or right-of-way use such as the Fresno Irrigation District or the Fresno Metropolitan Flood Control District.







## TABLE OF CONTENTS

- A. Preservation of Natural Superior Habitat
- B. Archaeological Findings
- C. 100-year Flood Plain Designation
- D. Topography - Erosion - Slope Stability
- E. Sand and Gravel Operations
- F. Environmental Setting/Flora and Fauna
- G. The Issue of Liability

|             |                                                |
|-------------|------------------------------------------------|
| Exhibit 1-1 | Big Dry Creek Reservoir Trail                  |
| Exhibit 1-2 | Shawnee Woodport Park Interpretive Area        |
| Exhibit 1-3 | Big Dry Creek Greenbelt Footway                |
| Exhibit 1-4 | Big Dry Creek Greenbelt Sanitary               |
| Exhibit 2   | State Park                                     |
| Exhibit 3   | Fresno County Commission Order No. 10 (1974)   |
| Exhibit 4   | Walking Tour Map                               |
| Exhibit 5   | San Joaquin River Parkway and Highway Corridor |
| Exhibit 6   | Lower and Land Use Plan                        |
| Exhibit 7   | Upper and Land Use Plan                        |
| Exhibit 8   | Lower and Land Use Plan                        |
| Exhibit 9   | Upper and Land Use Plan                        |
| Exhibit 10  | Technical                                      |

## **APPENDIX**

### **SUPPORTING INFORMATION TO THE**

### **CITY OF FRESNO**

### **MASTER MULTI-PURPOSE TRAILS MANUAL**







## TABLE OF CONTENTS

- A. Preservation of Natural Riparian Habitat
- B. Archaeological Findings
- C. 100-year Flood Plain Designation
- D. Topography - Erosion - Slope Stability
- E. Sand and Gravel Operations
- F. Environmental Setting/Flora and Fauna
- G. The Issue of Liability

- Exhibit 1-A Big Dry Creek Reservoir Trail
- Exhibit 1-B 60-Acre Woodward Park Equestrian Area
- Exhibit 2-A Big Dry Creek Greenbelt Floodway
- Exhibit 2-B Big Dry Creek Greenbelt Schematic
- Exhibit 3 Vista Point Designs
- Exhibit 4 Fresno County Recreation Trails Plan (1974)
- Exhibit 5 Walking Tour Listings
- Exhibit 6 San Joaquin River Parkway and Environs Conceptual Access and Land Use Plan
- Exhibit 7 San Joaquin Bluffs Environs Specific Plan Circulation Element
- Exhibit 8 San Joaquin Riverbottom/Bluffs Potential/Alternative Trail Alignments
- Exhibit 9 Alternative Development Standards and Technical Specifications.







## A. PRESERVATION OF NATURAL RIPARIAN HABITAT

### 1. Threatened or Endangered Species

The San Joaquin Riverbottom and Bluffs are the only significant eco-system with aquatic and riparian habitats within the FCMA and there are 13 special plant and wildlife species, and natural communities needing protection in the San Joaquin River environs, including:

#### Plants

1. San Joaquin Valley Orcuttia Grass - A plant associated with vernal pools classified as a Category 1 candidate for federal listing, listed as endangered by the state and identified as "Rare and Endangered in California and Elsewhere" by the California Native Plant Society.
2. Fleshy Owls Clover - A plant associated with vernal pools classified as a Category 1 candidate for federal listing, listed as endangered by the state (Code A2.1) and identified as "Rare and Endangered in California and Elsewhere" by the California Native Plant Society.
3. Hartwegs Pseudobahis - A plant associated with the tops of rolling low hills interspersed with valley grasslands and vernal pools, is listed as endangered by the state.

#### Animals and Birds

4. San Joaquin Pocket Mouse - A species classified as being either Uncommon and Declining or Peripheral and Endangered in California (Code B 3.1). The species is a Category 2 candidate for federal listing.
5. Valley Elderberry Longhorn Beetle - A beetle endemic to moist valley oak woodlands along the margin of rivers and streams. Their habitat is restricted to elderberry bushes and they have federal listing as a threatened species with critical habitat.
6. California Yellow-Billed Cuckoo - A bird classified as a Category 2 candidate for federal listing and listed in California as threatened. This is the only species of the six listed that is identified as threatened. Comments on the field report stated that these birds are historically uncommon but have been known to nest in this area.



7. Bald Eagle - Birds have been observed within the river environs and are listed as an endangered species by the federal government and the State of California. Its primary habitat along the San Joaquin River is thought to be in the more remote upstream areas of the River. The Millerton Lake State Recreation Area is an identified winter habitat area and has a program to protect these birds.
8. Canada Goose Wintering Habitat - Although not as common as in the past, wintering Canada Geese migrate from northern breeding grounds to the riverbottom and general vicinity. Historically, the Ball Ranch was a key area which has declined due to increased human activity. Habitat is identified by State as an area of Special Biological Importance.
9. Great Blue Heron - Two rookeries exist near Copper Avenue and the river. Many active nests are supported within the area's marsh or riparian habitats. These birds are listed as fully protected by the federal government but are not in danger of extinction at this time.

#### Natural Communities

10. Northern Hardpan Vernal Pool - A distinct natural community important to rare and threatened species or a very rare, endangered or threatened sub-species or threatened sub-species (Code B1.2). These Pools are identified in the non-riverbottom area of both northern Madera and Fresno County.
11. Northern Claypen Vernal Pool - A natural community with a high percentage of exotic plants, such as orcuttian grass or fleshy owl's-clover. Identified by the State as important to rare and threatened species or a very rare, endangered or threatened subspecies (Code B1.2). These pools are identified in the riverbottom and non-riverbottom area of Fresno County near Pinedale.
12. Valley Oak Bottomland Savanna - A type of vegetation that is possibly threatened but needs additional information (Code BU). A site has been identified near the San Joaquin River in the vicinity of the Ball Ranch.
13. Great Valley Mixed Riparian Forest - A natural community that has been identified by the state as important to rare and threatened species or a very rare, endangered or threatened subspecies (Code B1.2). A site has been located adjacent to the Ball Ranch.



Other federally listed endangered species associated with the San Joaquin River area include:

1. Blunt-nosed Leopard Lizard
2. Western Spadefoot Toad
3. California Tiger Salamander
4. Fresno Kangaroo Rat
5. Giant Garter Snake

In developing future trail corridors within the San Joaquin Riverbottom/Bluffs area, the following mitigation measures should be adhered for the preservation/protection of this riparian habitat:

1. The public must be educated through the schools, media, public notices and neighborhood meetings of the existence of these unique species and their endangered and threatened status.
2. The implementation of general plan policies from the preservation of open space, the conservation of the rivers, plant and wildlife resources, the use of open space easements, appropriate zoning to restrict development in areas identified as habitat for a rare and endangered plant and wildlife species.
3. Building trails with minimal disturbance to plant and wildlife.

## **B. ARCHAEOLOGICAL FINDINGS**

The California Public Resources Code requires the preservation of antiquities in state construction projects and establishes legislative policy for the preservation of archaeology, paleontology, and historic sites. Development of trail corridors along the San Joaquin Riverbottom could be considered a state construction being that the state has been taking a lead agency role in the acquisition of the Underdown property, a 286-acre proposed regional park site, located north of West Herndon Avenue along the North Milburn Avenue alignment to the San Joaquin River, which was purchased by the State Wildlife Conservation Board.

The Southern San Joaquin Valley Archaeological Information Center in Bakersfield revealed the existence of four known significant sites in close proximity to the river. Three sites being on or near the bluff, and one on the River Terrace between the riverbottom and the bluffs near Highway 41. Unfortunately, as a result of development these sites have been disturbed. Of these sites one has been destroyed by residential development, two are in areas designated for open space land uses, and the fourth is located near the Highway 99 crossing of the San Joaquin River, in an area designated for light industrial land uses.



Archaeological and historical sites are important regional resources which need protection. According to CEQA, if a project area is found to contain unique archaeological resources, and it can be demonstrated that the project will cause damage to this resource, the lead agency may require reasonable efforts to be made to permit any or all of the resource to be preserved in place or left in an undisturbed state. A systematic archaeological survey should precede the development of a multi-purpose trail corridor within the riverbottom/bluff area; this action could be incorporated as an implementation strategy of a trail development specific plan.

#### C. 100-YEAR FLOOD PLAIN DESIGNATION

The 100-year designation is an environmental concern to insure the health, safety and general welfare of all trail users within the San Joaquin Riverbottom area. In October of 1989, the Corps of Engineers evaluated and estimated 100-year floodflow down stream of Friant Dam from 20,000 CFS to 27,400 CFS.

As a result, flood maps need to be developed based on the greater floodflow. The Federal Emergency Management Agency (FEMA) is responsible for the National Flood Insurance Program and related flood maps. FEMA, estimated it would be 1994 or 1995 before new maps would be available. FEMA suggested that all new developments be elevated an additional foot or more above the flood elevation identified on the existing flood maps to reflect the new information.

#### D. TOPOGRAPHY-EROSION-SLOPE STABILITY

Trail corridor development along the San Joaquin Riverbottom/Bluffs area could potentially threaten the health, safety, and welfare of trail users, unless precautionary erosion control methods are incorporated into the design and maintenance of a trail system. Potential erosion sites should be inventoried and appropriate erosion control methods proposed. Each project must consider the nature of the erosion, the need for erosion control at the particular location, the appropriate method for effectively controlling erosion with the least damage to riparian vegetation and wildlife, and the aesthetics of the final project.

#### E. SAND AND GRAVEL OPERATIONS

The 1984 Fresno General Plan identified riverbottom gravel excavation as altering and destroying wildlife habitat, the quality of the aquatic environment and the river's natural beauty. In developing trail corridors along the riverbottom conflicts must be minimized between the continued surface mining operations and the future utility of using the riverbottom for recreation, wildlife



preservation, nature study and aquatic enjoyment. The following mitigation measures are intended to minimize potential conflicts between sand and gravel operations and future trail users.

#### Mitigation Measures

1. For safety, all future trail users should maintain a 200 to 300-foot distance away from any active mining operation.
2. An inventory of all leases and conditional use permits should be conducted to determine their expiration. This information could provide more accurate plan alignments and could minimize problems associated with interim trail development such as disturbance of wildlife and vegetation.

#### F. ENVIRONMENTAL SETTING/FLORA & FAUNA

The description of the environmental setting/flora & fauna is aimed at those environs which contain existing or potential multi-purpose trail corridors. This discussion is necessary to alert the various trail users of the existence of any threatened or endangered plant or wildlife species.

The San Joaquin River and its environs are seen as the backbone to any trail corridor system within the Fresno-Clovis Metropolitan Area. Trail corridor extensions from the river to other city areas (i.e. Downtown Fresno), could be via: railroad rights of way; canal banks; utility power line alignments; regional parks; and major streets and highways. The San Joaquin Riverbottom and Bluffs with its scenic beauty and variation in topography are the only major eco-system with aquatic and riparian habitats within the urban area. Other potential trail corridors which have been identified offer no unique physical, vegetation or wildlife feature.

##### 1. Riparian Habitat

The following statements highlight significant riparian habitat findings within the San Joaquin River trail corridor. For more specific information refer to the San Joaquin River Area Reconnaissance Study "Volume 1", and to the Manual's environmental considerations-mitigation measures section on The Preservation of the Natural Riparian Habitat. Trail users within the San Joaquin River trail corridor should be aware that riparian vegetation consisting of woodland (oak, sycamore, willow, cottonwood) and undergrowth (rose, blackberry, wild grape), is diminishing. Further, the state has identified thirteen special plants and wildlife needing protection in the San Joaquin River area between



Freeway 99 and Friant Dam. Of these species, the following five may be affected by any future trail corridor development:

1. San Joaquin Valley Orcutias Grass
2. Flesh Owls Clover
3. San Joaquin Pocket Mouse
4. California Yellow-Billed Cuckoo
5. Northern Clypan Vernal Pool

## 2. Cultural-Educational Resources

Cultural and educational resources for trail corridors should focus on any unique and significant archaeological, biological and physical feature or finding within the path of any future trail. Currently, school districts are exposing students to the diversity of animal/plant life and the food web along the San Joaquin River area.

Within future multi-purpose trail corridors along the San Joaquin River area, the potential exists to develop specific low-intensity use trails which concentrate on the high sensitivity biotic element through ecological scientific research.

## 3. Mineral Resources

Within the Fresno-Clovis Metropolitan Area, significant mineral resources exist along the San Joaquin River. These resources are in the form of rock, sand and gravel aggregate and are currently being mined for the production of Portland Concrete Cement. The State Geologist has estimated that the riverbottom area can provide enough aggregate for Portland Cement to meet local needs for the next twenty years. Therefore, the development of future multi-purpose trail corridors will have to take into consideration the continued operation of sand and gravel quarries.

## G. THE ISSUE OF LIABILITY

Within a community, the issue of liability is generally one of the first "red flags" waved before any proposed trail corridor or greenway plan. Citizens are very aware of the startling industry-wide increases in liability insurance premiums and the difficulties in obtaining liability insurance for both private and public recreation providers. Combined with the ever-increasing inclination on the part of the American public to sue, the general willingness of insurance companies "to settle out of court" to save time and money and the highly publicized awards for damages and the result is an exaggerated perception that the "liability issue" is unsolvable and unmanageable in any new trail development.

Although ease in obtaining or affording liability insurance is no longer guaranteed, this change is not an insurmountable crisis to community trail corridors and greenway planning efforts. The



following general information is useful as a starting point to explore options for liability coverage available to private and public entities or to limit the liability of landowners allowing public recreational use of the land. The applicability of these options involves many legal questions that each entity should explore with their own legal counsel.

#### 1. Options for Liability Coverage

Prior to the dramatic rise in insurance costs, liability insurance was routinely carried by local jurisdictions other than federal or state agencies in order to provide coverage for park visitors as well as for city and county employees and volunteers. Currently, for many reasons, this insurance is either difficult to find, impossible to afford or both. The report from the President's Commission on Americans Outdoors has pointed out that insurance companies, in addition to charging higher rates, are also simply selecting which risks they will insure. Private recreation providers are often forced to "limit, discontinue or substantially raise the price of leisure services they provide."

Within the public sector as well, recreation districts and park departments have had to reduce the level of coverage, become self-insured or operate without insurance. When the level of coverage is reduced, activities involving risk may have to be curtailed or eliminated, and other programs canceled unless the sponsor can provide proof of liability coverage.

If a district elects to become self-insured, a formal decision on the part of the agency must be made to retain risk through a reserve fund rather than to purchase insurance. This option seems to be fairly common for larger cities and counties. It requires an internal structure to coordinate the self-insurance program and conscientious risk management. Many recreation districts such as the East Bay Regional Park District and The Marin Open Space District have resorted to self-insurance for their total risk, or have assumed risks to a certain limit and carried liability insurance only for incidents over that dollar amount.

INSURANCE POOLING is another tool being utilized by smaller jurisdictions to spread the risk over several entities and save on premium costs. The risk of this option relates to the size differences of individual members, their ability to manage risk effectively and their accountability in the case of potential contingency costs.

In a fairly new development, some national insurance companies now offer specific liability coverage for certain user groups (snow-mobilers, hunters), their activities (such as meetings and trail rides) and for trails maintained and operated under easement agreements. Applications of this type of club liability insurance



may be available for specific entities such as trails or specific user groups of a particular resource.

### Limitations on Liability Available to Landowners

To encourage landowners to make their land accessible to the public, various State laws have been enacted to limit the liability exposure of landowners.

To encourage free access to private land for recreational purposes (hiking, horse use, fishing, camping, nature study, sightseeing and many other activities), the recreational use statute, California Civil Code Section 846, has been enacted to immunize owners of land from financial responsibility in the event of an injury. Most other states have similar statutes. However, the immunity provided by the statute only applies if the landowner does not charge a fee for the recreational use of the land and if the landowner does not expressly invite the person onto the property. In addition, this immunity is not available in the event of an injury due to willful or malicious failure on the part of the landowner to warn or guard against a dangerous condition, use, structure or activity.

Thus, a landowner who allows recreational use of his land but who neither expressly invites the public to use the land nor is guilty of willful or malicious failure to guard or warn against a known dangerous situation will not be liable for injuries sustained on his land. The risk is placed instead on the visitor who wished to experience the natural environment with its associated risks.

Still, many landowners remain reluctant to make their lands available for recreational purposes for fear that what began as a good intention may turn into a serious financial liability. And it is true that despite the protection of the recreational use statute, an injured individual may still sue the landowner. Even though the courts will probably find in favor of the landowner, he or she may incur legal costs in obtaining advice and defending themselves. The landowner can request the court to have his legal fees paid by the plaintiff, but this rests with the discretion of the court, and there are no guarantees. In any event, the landowner will most likely have invested some degree of personal time and involvement during the legal process that is not reimbursable.

The immunity does not apply to the landowner who does charge an entrance or use fee since it is then assumed that the money could be applied to making the recreation experience as safe as possible and/or to purchase insurance.

Under the Federal Tort Claims Act, the United States is liable for injuries sustained on its land or interest in land, i.e. and easement, only when the injury is caused by the negligence of a Government employee under circumstances where the United States,



if a private person, would be liable to the claimant under the law of the State where the injury occurs. Because the United States is treated as a private individual within the state where the injury occurs, the recreational use statute defense is available to federal land management agencies.

Unless specifically authorized by Congress, the federal government is not allowed to assume the liability of other agencies or individuals or enter into "hold harmless" or "indemnity" agreements since these are interpreted as commitments and does so on an annual basis, i.e. pay as you go concept. Thus, these types of agreements covering future liability are specifically prohibited by statute. Under the terms of a cooperative agreement, however, the federal government could assume liability under the Federal Tort Claims Act to the extent that it has construction and maintenance responsibilities over the trail, i.e. for losses caused by its negligent acts or omissions.

Public property other than that owned by the United States is not covered by the recreational statute. However, under State Government Code Section 831.2 and 831.4, the State of California has "an absolute immunity from liability for injuries resulting from natural conditions of a state park area where the only improvements are recreational access roads and hiking, riding, fishing and hunting trails." Section 831.2 states that a public entity is not liable for "an injury caused by a natural condition of any unimproved public property". Case law has more specifically defined "natural condition" and "unimproved property" within the context of recreational use and has limited the liability of the State and transferred much of the responsibility for risk of injury to the public who chooses to voluntarily use public, unimproved property in its natural condition.

Local city and county recreation agencies or special districts can negotiate easements through private property or use another agency's land for recreational activities if they assume the liability and maintenance responsibilities. Or a local agency such as the Santa Clara County Water District, which has a joint recreational use policy, can encourage other county agencies to utilize their property for trails and other recreation opportunities. Under this policy, the other agency must assume maintenance, operation and liability responsibilities.

In California, another mechanism to limit liability is available to public land trusts that conserve public access, agriculture, scientific, historical, educational, recreational, scenic or open space opportunities. Under Government Code Section 831.5, the public land trusts to "increase opportunities for the public to enjoy access to and use of natural resources if such programs are consistent (1) with public safety, (2) with the protection of such resources, and (3) with public and private rights." This Government Code Section may actually provide broader immunity for private land



trusts than that provided by the recreational use statute. It requires that nonprofit public land trusts enter into agreements with the California Coastal Conservancy for lands within the coastal zone or with the State Public Works Board for lands outside the coastal zone. These agreements confer the status of "public entity" upon the public land trust, bringing the additional limits on liability offered by Government Code Sections 831.2, 831.4 and 831.7.

The California Coastal Conservancy is preparing a comprehensive technical bulletin outlining these sections and their applicability to private land trusts.

### CONCLUSIONS

Although the issue of liability is still not an easy one, it can be overcome as a barrier to trail and greenway developments. Legal history supports the effectiveness of recreational use statutes. Yet the fear persists, especially with private landowners, that liability will become an inordinate burden if they allow recreational use of their lands. Additional studies to document the liability reality (the number of injuries, the suits, the awards etc.) as it relates to known, existing trails would be helpful in reducing these fears.<sup>1</sup>

#### References:

"The Liability Crisis Threatens", Americans Outdoors, The Report of the President's Commission, Island Press, 1987.

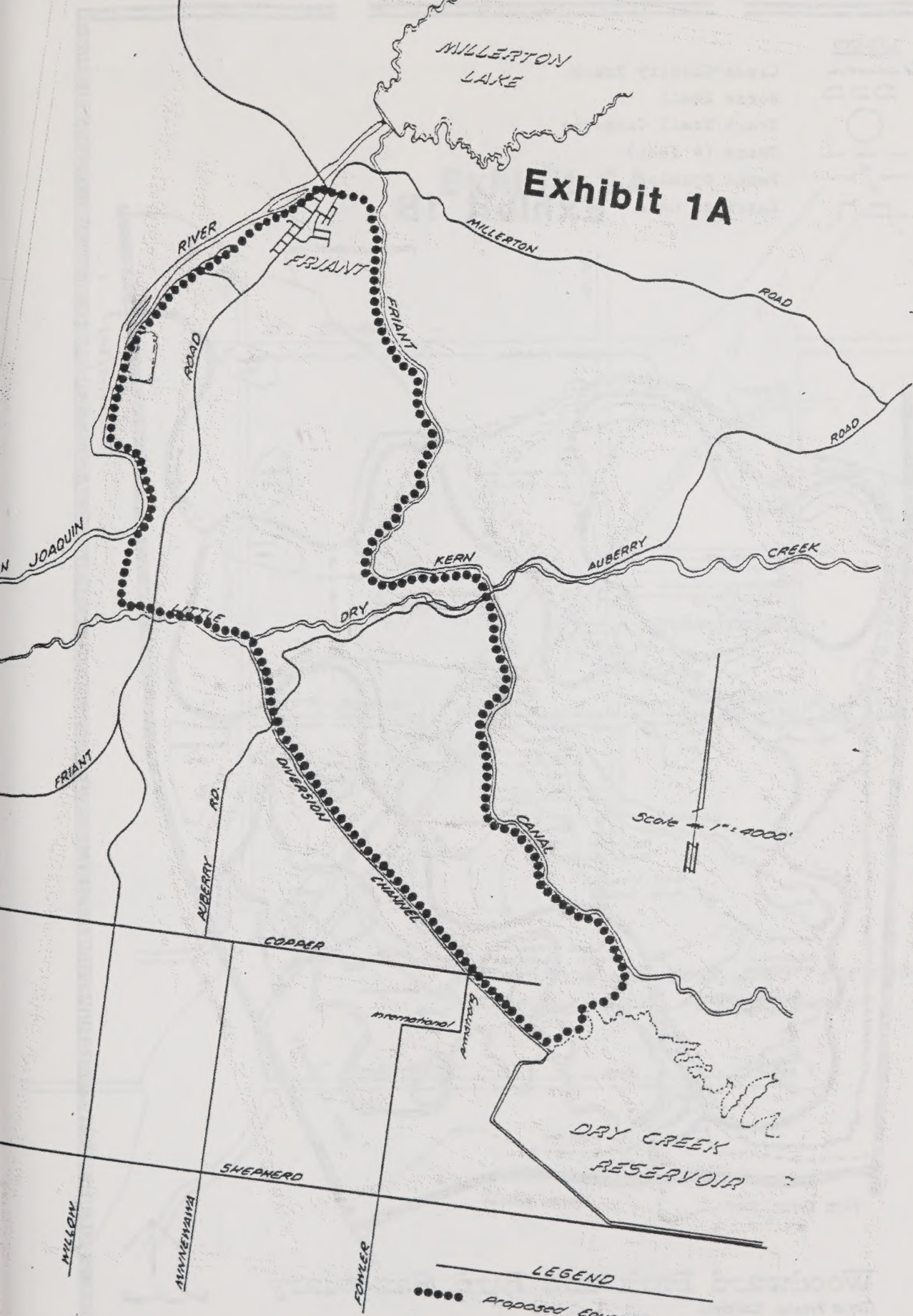
"The Liability Insurance Crisis: A Literature Search" for the President's Commission on Americans Outdoors, Bonnie Dierenfeld-Michael, Ohio Department of Natural Resources, Columbus, Ohio, 1986.

"Local Park and Recreation Agencies in California -- A 1987 Survey", State of California Department of Parks and Recreation, 1988.

Draft Technical Bulletin of the California State Coastal Conservancy on Government Code Section 831.5, 1988.



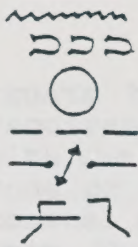
# Exhibit 1A



- LEGEND
- ..... Proposed Equestrian Route
  - Paved Street or Highway
  - ~~~~~ Canal, Creek, or River

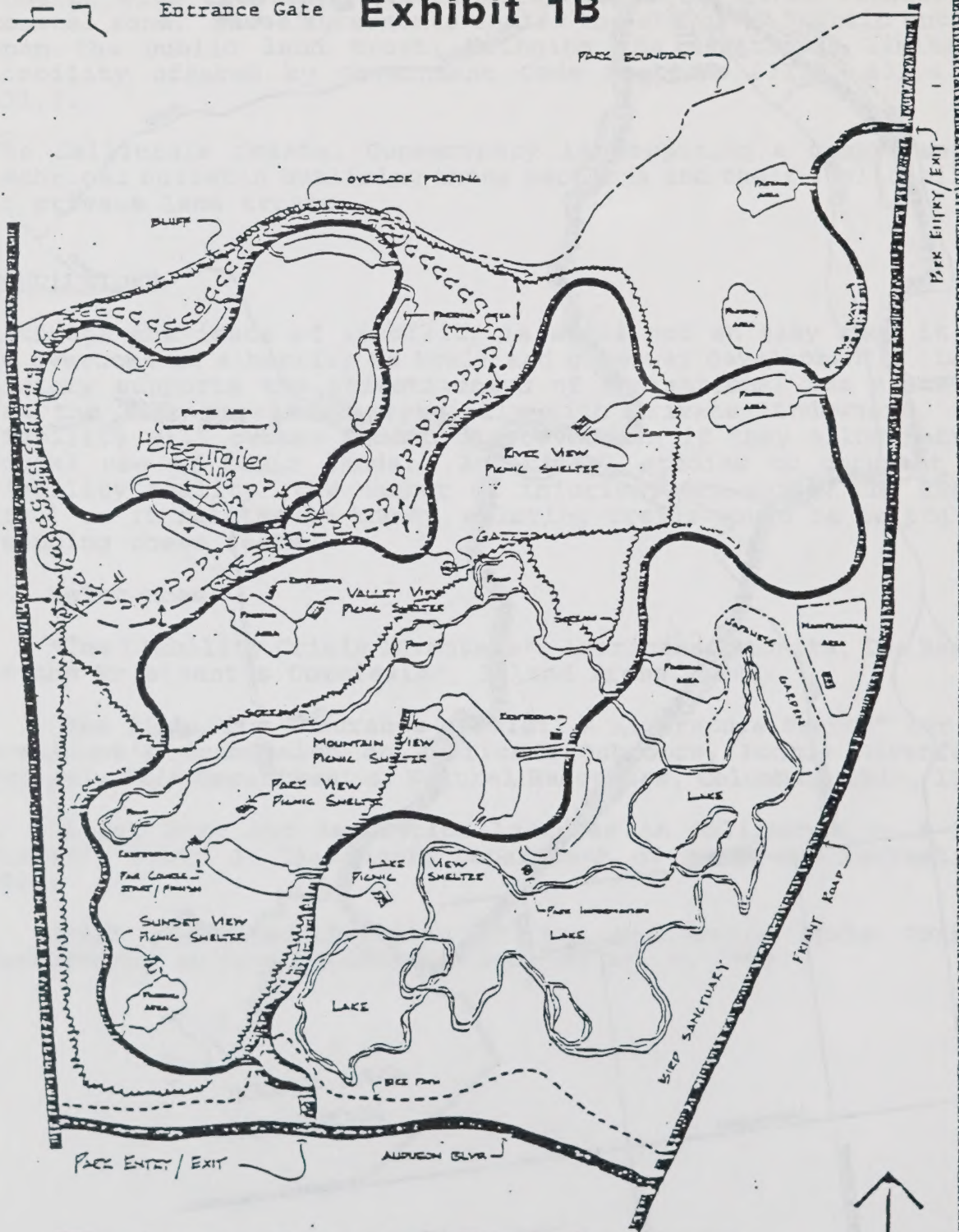


# LEGEND



Cross-Country Track  
Horse Trail  
Track/Trail Crossing  
Fence (4 feet)  
Fence Opening  
Entrance Gate

## Exhibit 1B

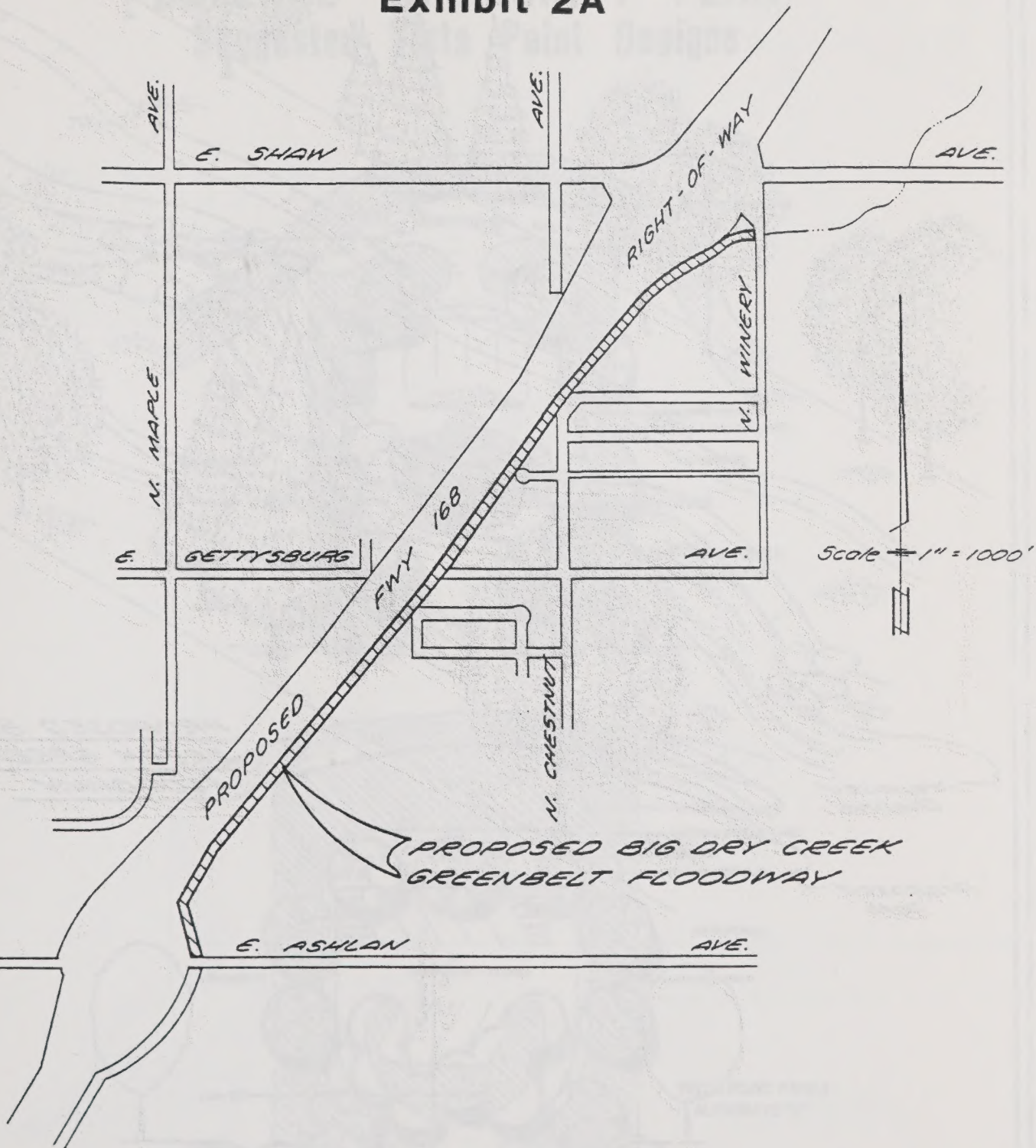


Woodward Park and Bird Sanctuary  
City of Fresno, California



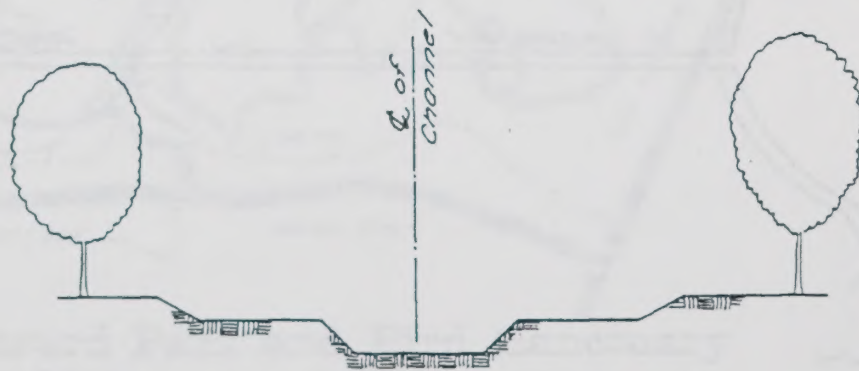


## Exhibit 2A





## Exhibit 2B



TYPICAL SECTION

NO SCALE



# Exhibit 3

## BULLARD COMMUNITY PLAN

### Suggested Vista Point Designs

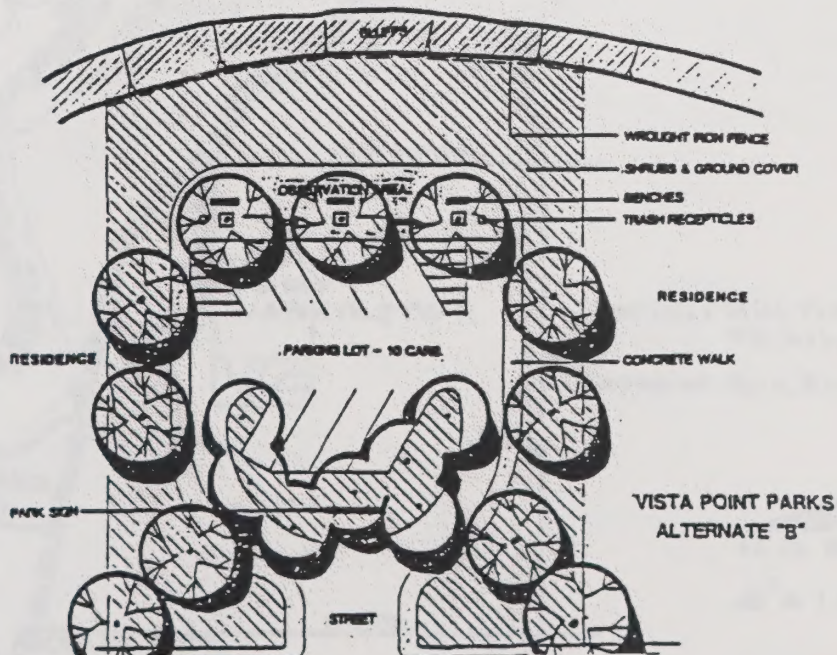
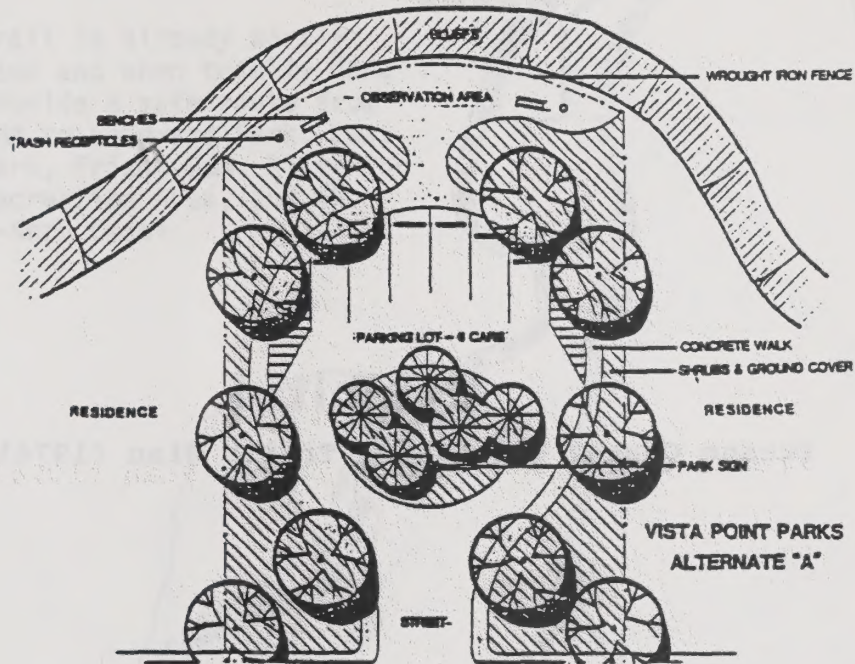




EXHIBIT 4  
FRESNO COUNTY RECREATION TRAILS PLAN  
APPROVED BY THE BOARD OF SUPERVISORS

## **Exhibit 4**

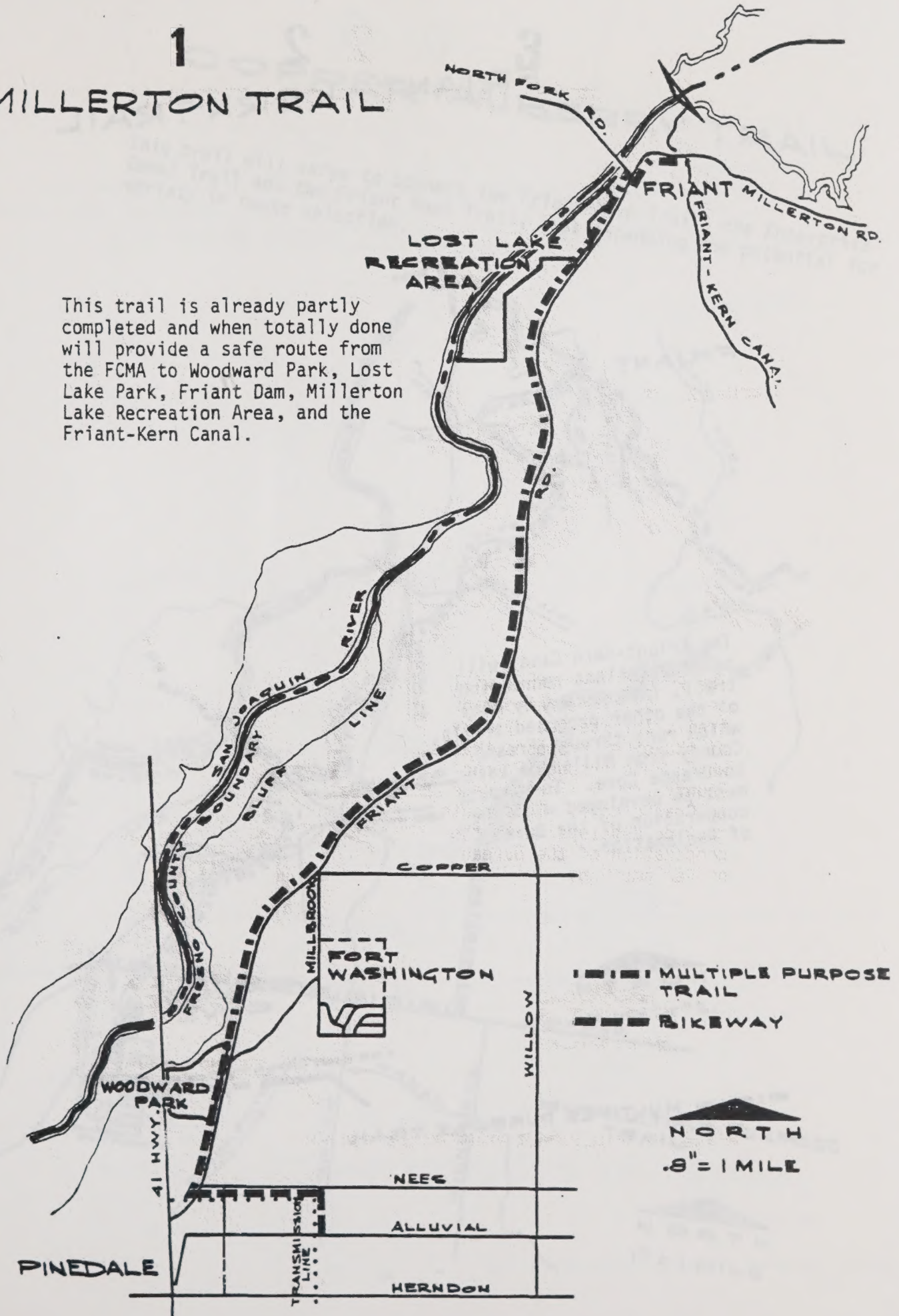
**Fresno County Recreation Trails Plan (1974)**



1

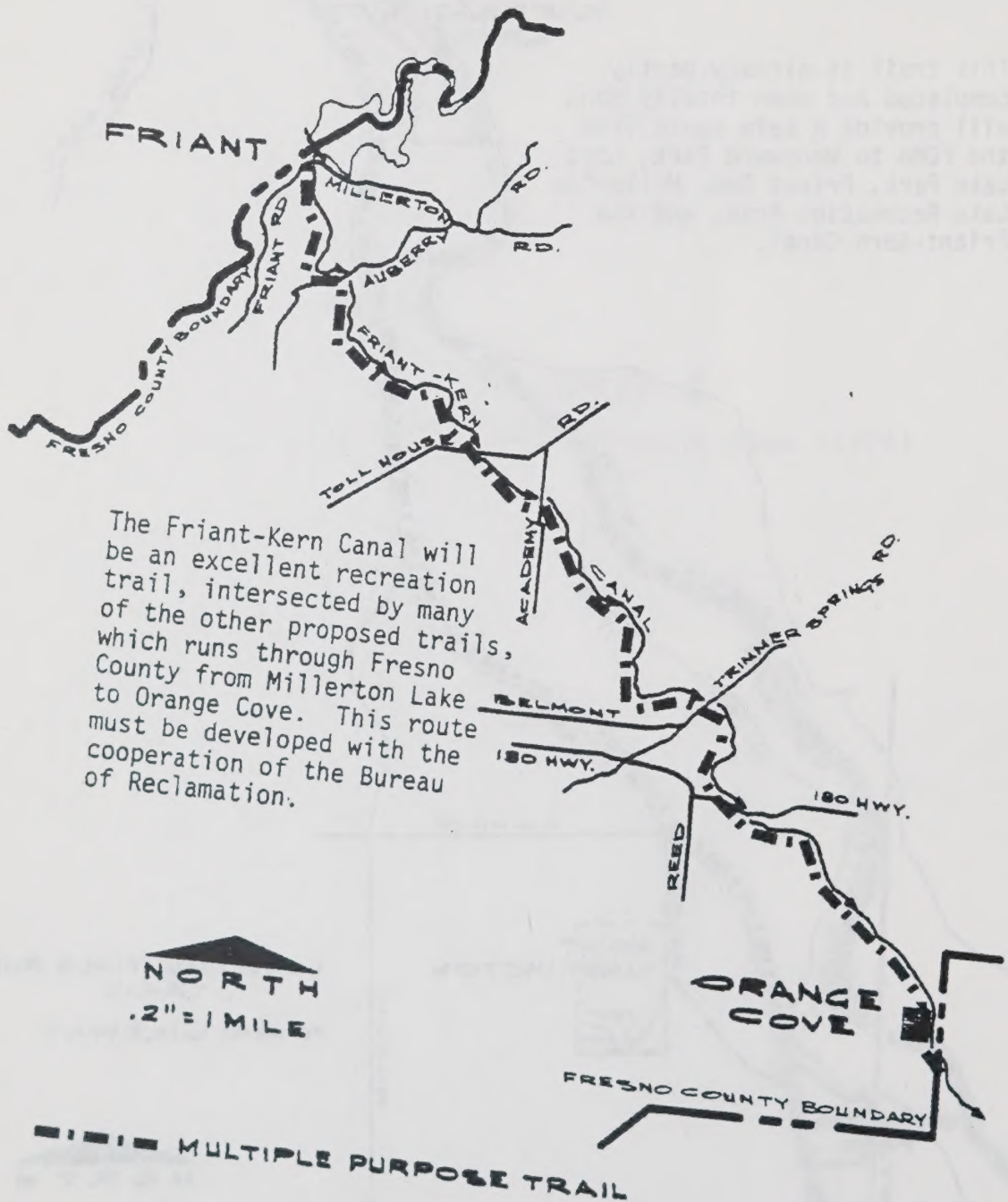
## MILLERTON TRAIL

This trail is already partly completed and when totally done will provide a safe route from the FCMA to Woodward Park, Lost Lake Park, Friant Dam, Millerton Lake Recreation Area, and the Friant-Kern Canal.





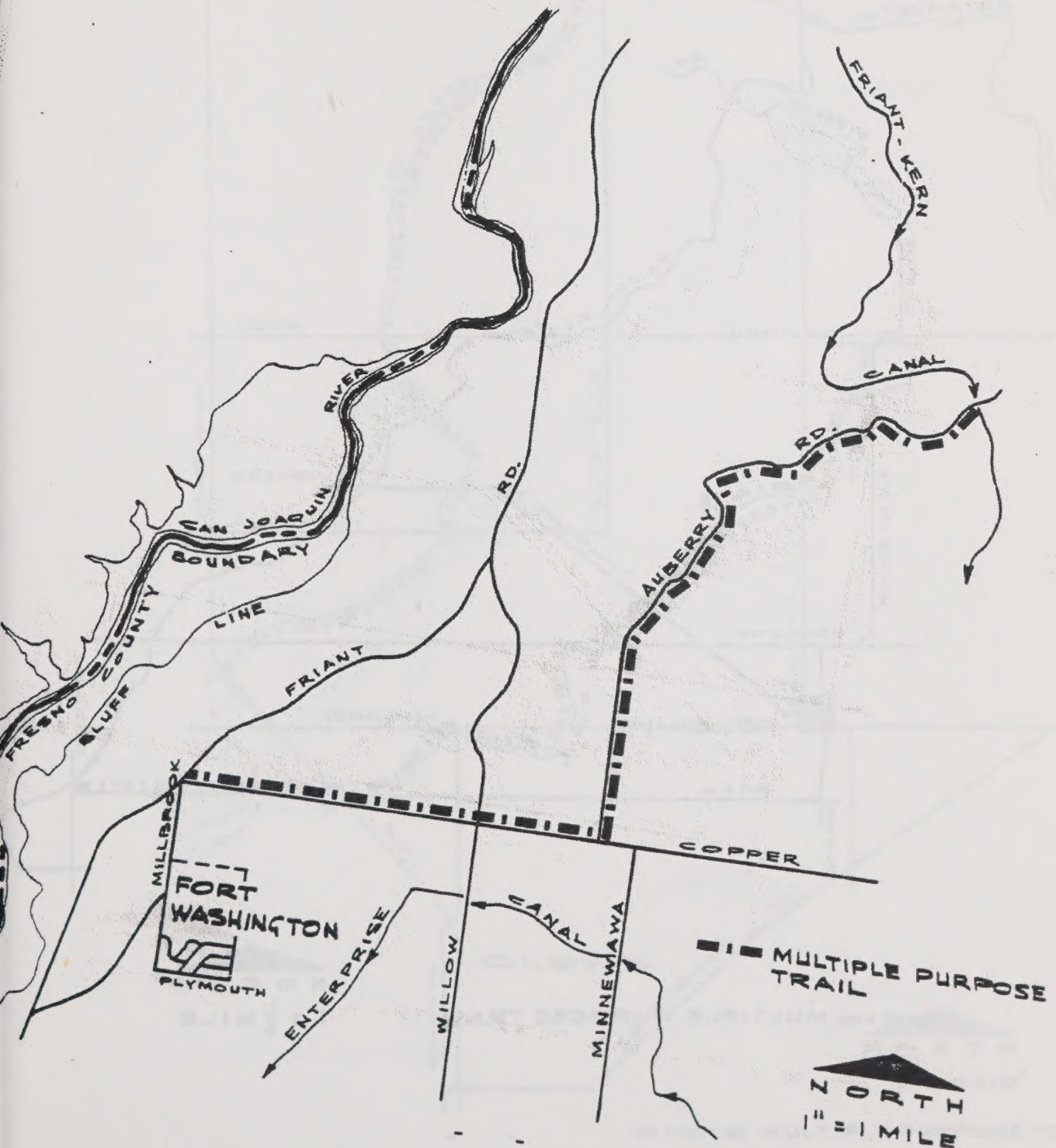
## FRIANT-KERN TRAIL





# COPPER-AUBERRY TRAIL

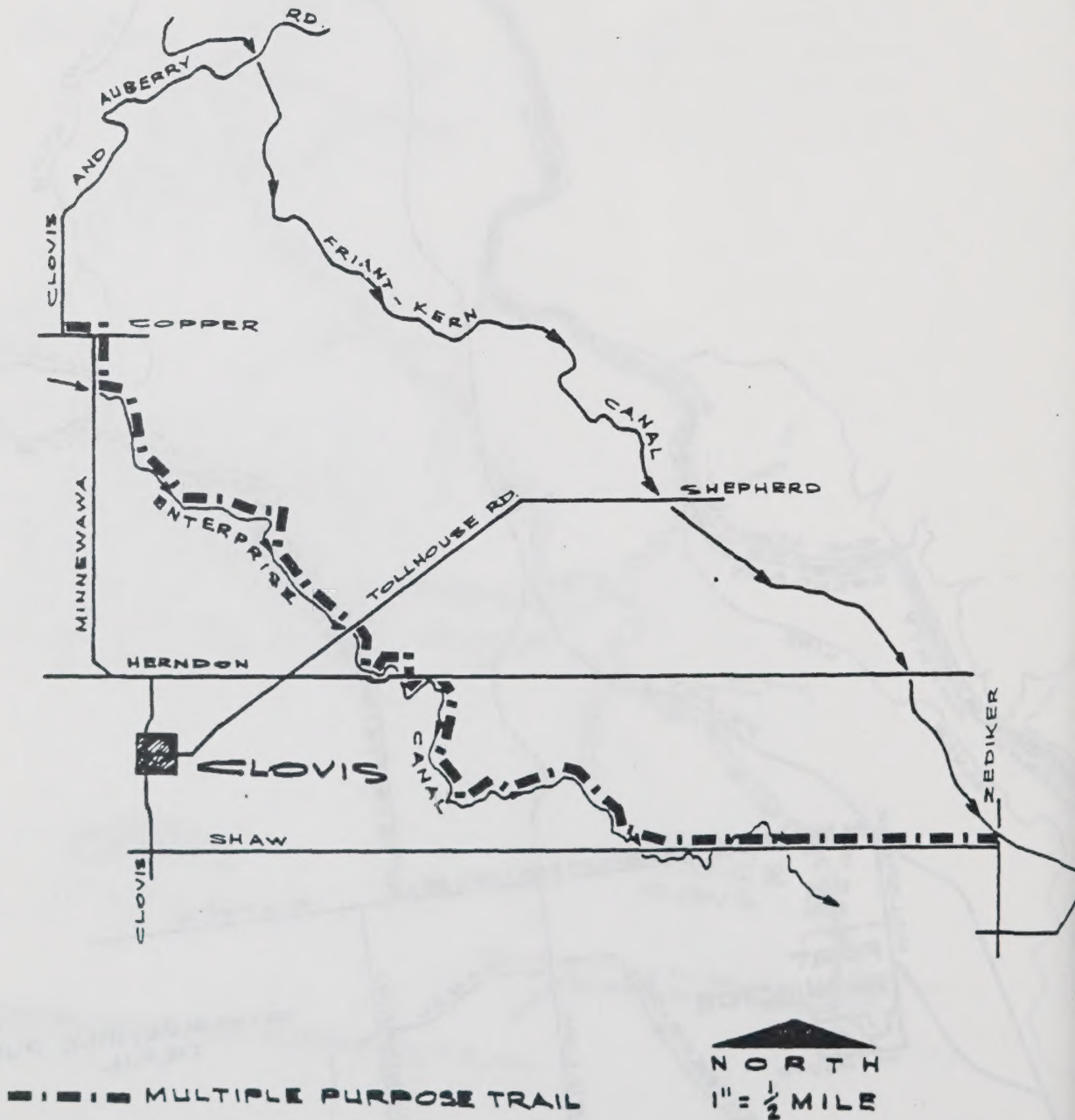
This trail will serve to connect the Friant-Kern Trail, the Enterprise Canal Trail and the Friant Road Trail, thus expanding the potential for variety in route selection.





# ENTERPRISE TRAIL

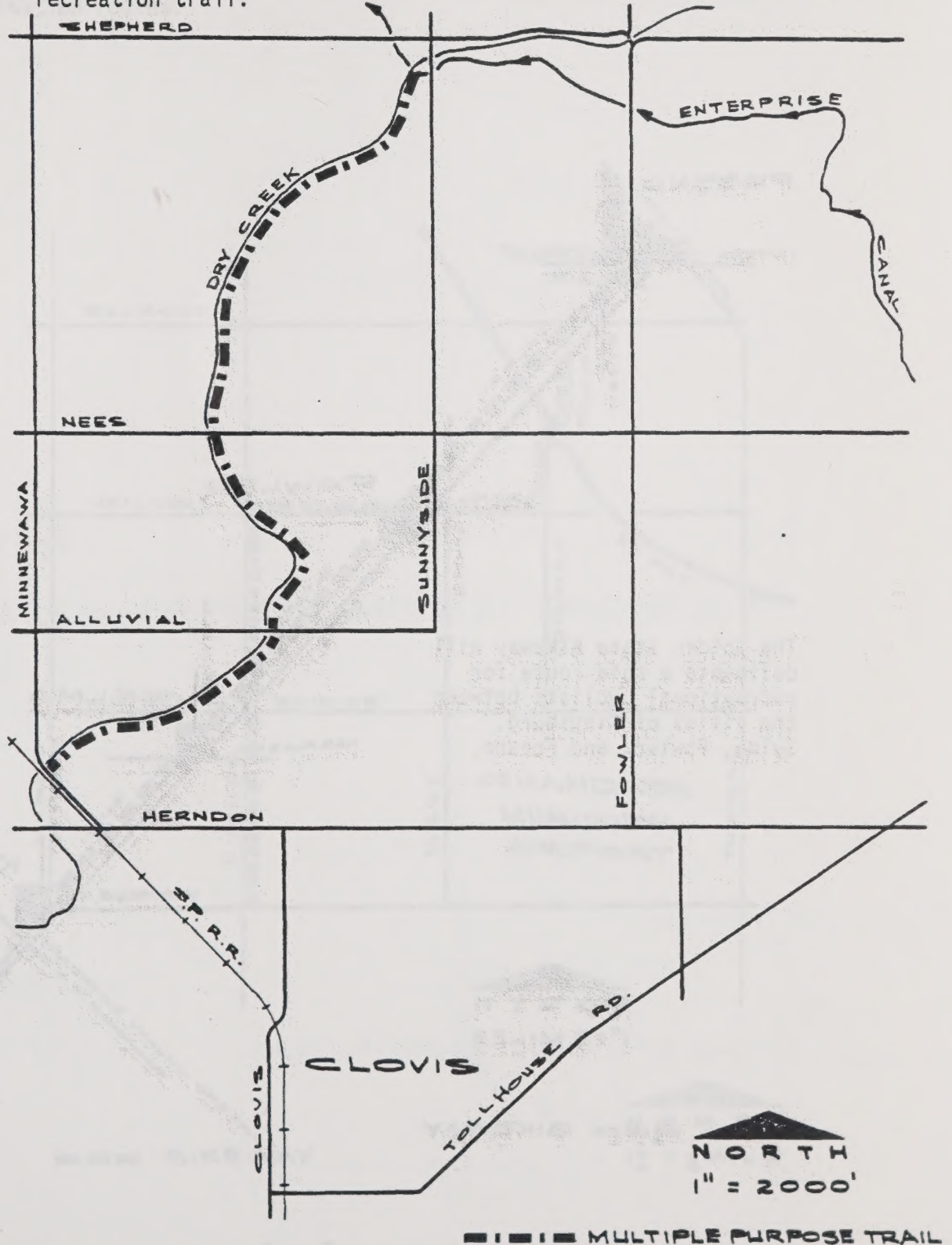
This trail using portions of Copper Avenue, Minnewawa Avenue, the Enterprise Canal, and Shaw Avenue will provide a beautiful ride between the Friant-Kern Canal and the Copper-Auberry Trail.





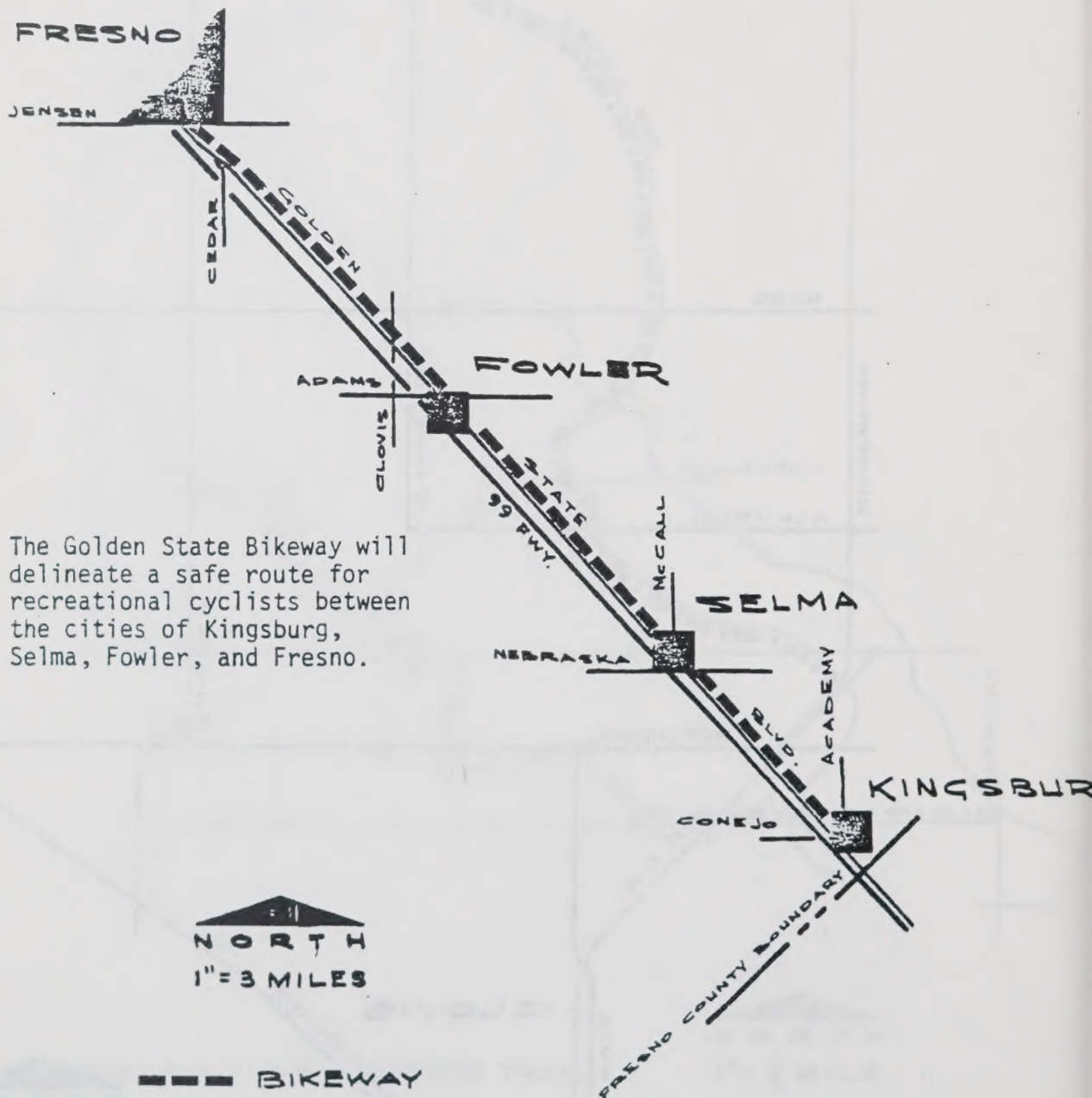
## DRY CREEK TRAIL

Dry Creek presents an excellent way to route recreational riders and hikers from the FCMA to the Enterprise Canal Trail and thus to other trails. Dry Creek is included in the City of Clovis General Plan for open space uses and could be developed within the city limits as a recreation trail.





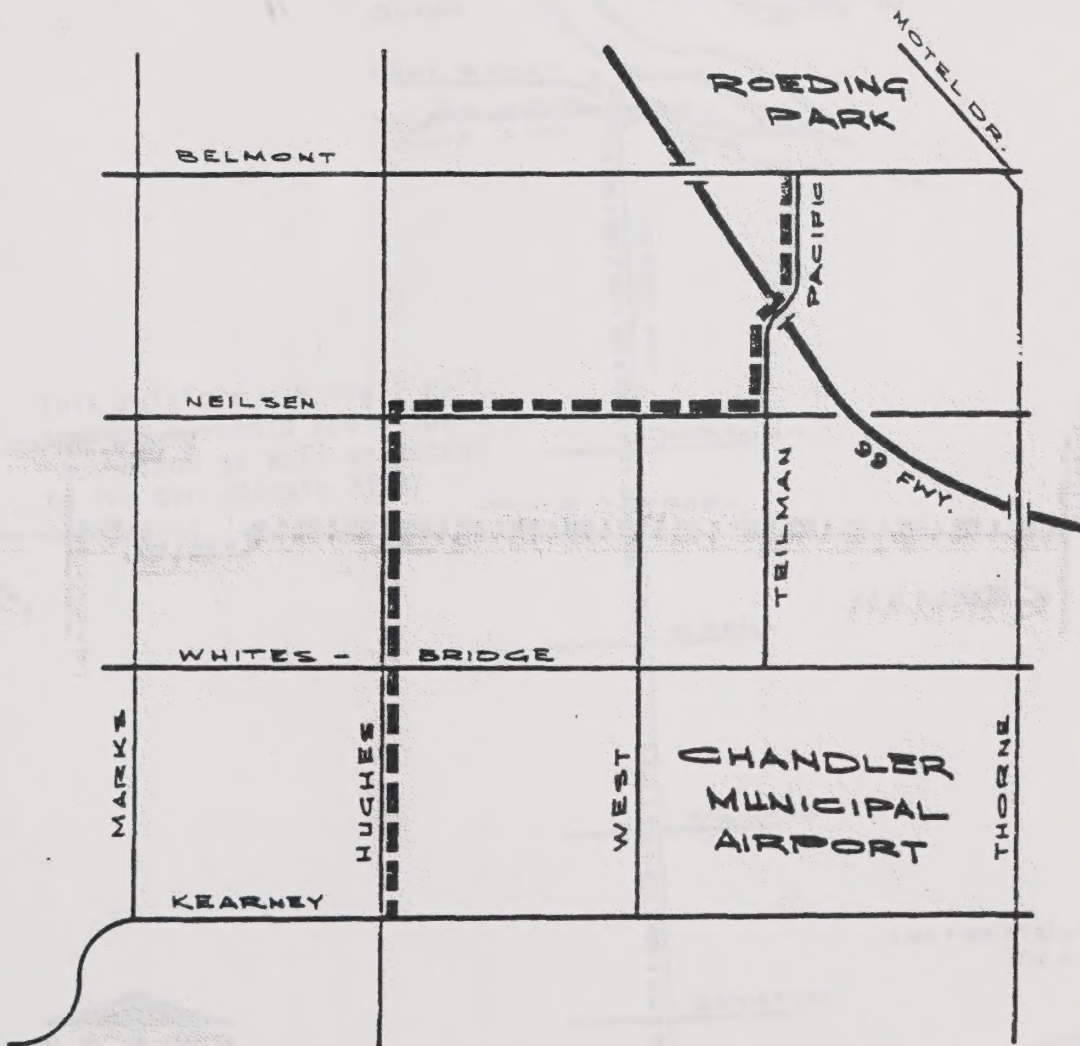
## GOLDEN STATE BIKEWAY





## ROEDING-KEARNEY BIKEWAY

This route will provide bicyclists with a route from Roeding Park to the Kearney Trail and thus will connect Roeding and Kearney Parks by recreation routes.



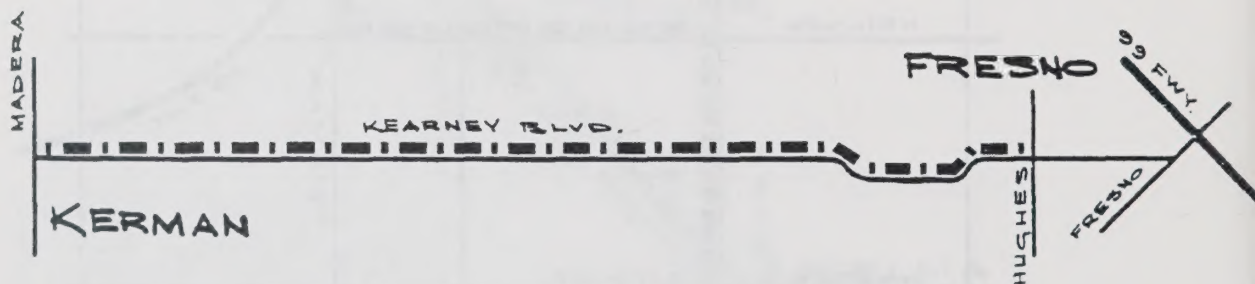
--- BIKEWAY

NORTH  
 $\frac{1}{4}'' = \frac{1}{2}$  MILE



## KEARNEY TRAIL

The Kearney Trail is completed for bicycle travel between Hughes Avenue and Kearney Park. This plan recommends it be developed for multiple purpose use and that it be extended to the City of Kerman.



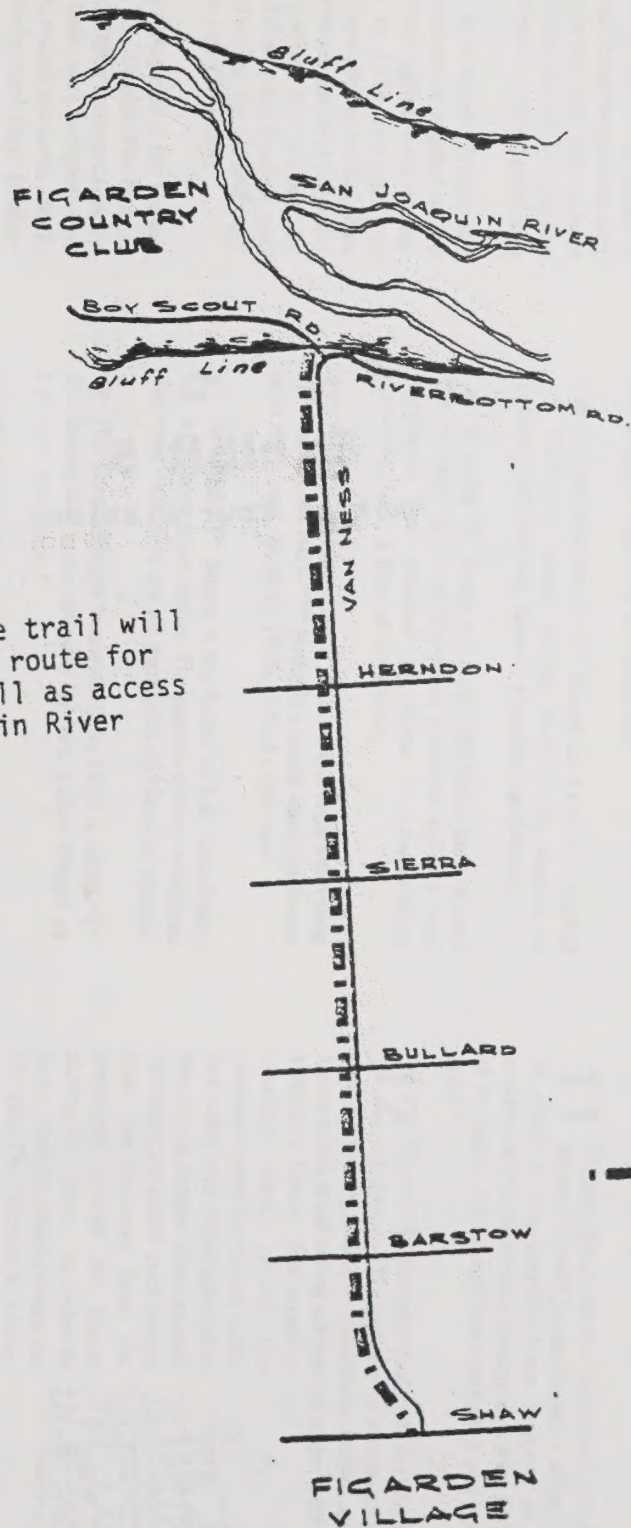
— — — — — MULTIPLE PURPOSE TRAIL

NORTH  
1" = 2 1/2 MILES



## VAN NESS TRAIL

This multiple use trail will provide a scenic route for recreation as well as access to the San Joaquin River bluff area.



— — — — — MULTIPLE PURPOSE TRAIL

NORTH  
2" = 1 MILE



004

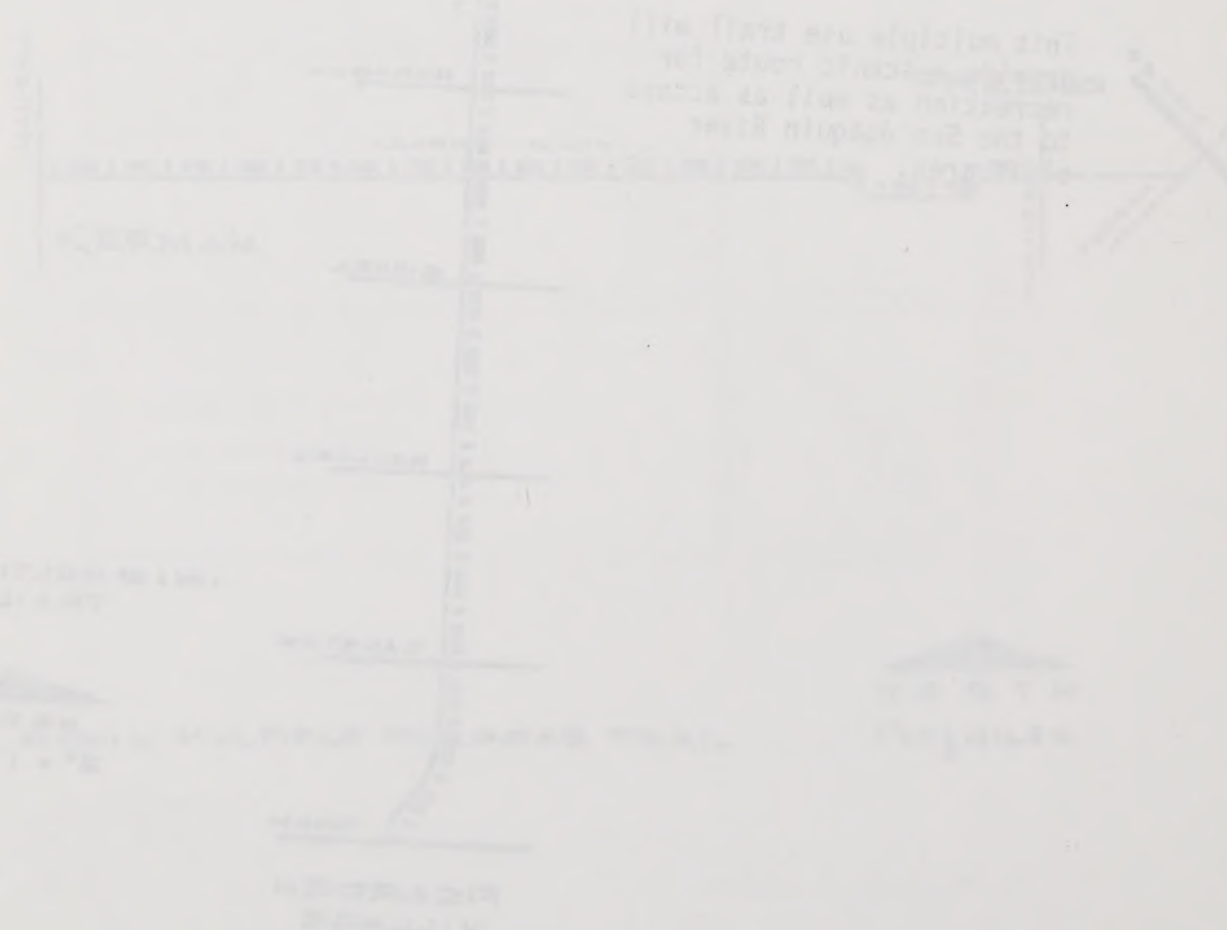
WALKING TOUR LISTINGS

The walking tour is designed for people who want to see the city and its surroundings. It is a self-guided tour and can be done at any time.



## Exhibit 5

### Walking Tour Listings





## A HISTORIC WALKING TOUR OF FRESNO

by Maybelle Selland, Executive Director  
Fresno City and County Historical Society  
illustrated by Otis Bell

**T**here are numerous points of historic interest within an area of a few blocks, in what was the original city of Fresno laid out in 1873.

Fresno was founded by the Central Pacific Railroad May 16, 1872, when the telegraph office for the railroad was moved to Fresno Station. It became the county seat in an election held March 23, 1874, and on October 8, 1874, the cornerstone of the "old" courthouse was laid. In the spring of 1875 the population was 600: 200 Chinese and 400 non-Chinese. Many of these people had moved from the first county seat of Millerton, a dying gold rush town.

From this humble beginning in a desert, Fresno has grown to be the raisin and agribusiness capital of the world. Fresno County is the richest agricultural county in the United States, having in 1976 reached and exceeded a billion dollars on the agricultural market. This was possible due to rich soil, the genius of those who realized the possibilities of irrigation, the railroad for transportation, the managerial skill of early leaders, and the brawn and hard work of the average farmer and field hand, who came from all corners of the world.

**1** A good starting place for a walking tour is the **Fresno Water Tower** at Fresno and "O" Streets. The Tower, approximately 100 feet high, and with a storage capacity of 250,000 gallons in its water tank, was completed in November of 1894 and was in constant use until 1963. It is constructed of ordinary red bricks, each layer smaller than the one below it, to produce a beehive effect. Now that it no longer stores water, the real value of the building is to be found in its graceful beauty, its almost perfect symmetry, and its stately, other-century charm. It is listed on the National Register of Historic Places.

**2** Proceeding east on Fresno Street to "S" Street, you come upon the lovely **Brix Mansion**, a classic example of Italian villa architecture with its characteristic square tower. The house, designed by San Francisco architect Edward Foulkes, was completed in 1911. Many of the interior walls are paneled in deep-toned walnut with hand-carved trim. The exterior of this concrete two-story building is painted in contrasting colors so that the ornate trim on the eaves can be better appreciated. White columns grace the front and side entrances with a carriage way on the west side.

H.H. Brix, a German immigrant, came to homestead in the Coalinga area. Between 1898 to 1901 he went to Alaska to pan gold, but was not successful. When he returned to Coalinga the oil boom was on, and the black gold proved to be most profitable. This palatial home is a tribute to his success



in the petroleum business. In 1973, Miles, Sears and Eanni, a firm of attorneys, purchased the property for their offices. Great care was taken in its restoration to retain the original charm of the building.\*

**3** Continuing down "S" Street at 1133 is a typical California brown shingle built in the manner of Greene and Greene, famous Pasadena architects.

**4** At 1050 "S" Street is a lovely old home built of sand colored brick in Georgian Colonial style. It was purchased and restored by Allen Y. Lew-William Patnaude, Inc., a firm of architects.

**5** In the 1000 block on "T" Street are several interesting homes. At 1025 "T" Street is a sturdy red brick home with tiled roof. Built in 1916, it looks like new.

**6** At 1060 "T" Street is the home of S.B. Goodman, a clothing store owner. The portico dormer windows and Ionic columns are all examples of classical details.

**7** The Gundelfinger home, built in 1910 at 1020 "T" Street, has been restored by Mrs. Esther Phipps as a private residence.\*

**8** The Yost and Webb Mortuary at 1002 "T" Street was built in 1912. This is bungalow style architecture with columns of river rock which is repeated in the fireplace inside.

**9** At the corner of "T" and Tulare is the F.K. Prescott residence, now the Harry Palm Funeral Home. The home, built of brick in 1906, is of Georgian style architecture with Eastlake details. Four Grecian columns grace the entrance on "T" Street. The original wainscoting on the first floor walls was made of black redwood lumber handpicked from the nearby Sierras.



**10** Three blocks away at Mariposa and "R" Streets is St. John's Cathedral. This imposing twin-spired red brick edifice was completed in 1902, and it is one of the oldest churches still in use in Fresno. The Romanesque ceiling and stained glass windows add to the beauty of the interior. If your walking tour is on Sunday, there is a Spanish language mass at 12:10.



**11** Diagonally across the street from St. John's is the home of Sheriff James Darwin Collins constructed in 1905. It has recently been restored as a private residence. An interesting attraction is the stable in back of the home. It is in excellent condition and in its original state.\*

**12** Down "R" Street at Tulare is the Dr. T.R. Meux residence. This house was constructed in 1889 and is a striking example of Victorian-Gothic architecture. Unique fish scale siding adorns the upper portion of this two-story home. The wooden shutters which cover the windows were functional in the hot valley and added interest to the overall design. Vine-covered verandas provided cool refuge from the summer heat. Six fireplaces heated the house during the winter. In order to find a more healthful climate for his wife, Dr. Thomas R. Meux, a physician, moved his family to Fresno from Tennessee. Dr. Meux's daughter, Anne, lived in this home for 81 years, one of the longest individual residencies in one of Fresno's oldest dwellings. The home is owned by the City of Fresno and is on the National Register of Historic Places. It is open for tours Tuesday through Sunday, 12:00 noon to 4:00 p.m.



**13** Just across the tracks on Tulare Street is the Santa Fe Station constructed in 1899. This interesting building, with its white plaster walls, red tile roof and archways, is an example of the simple California mission style of architecture popular at the turn of the century. Additions and alterations have been made to the original structure and it has been in constant use. On October 5, 1896, the first train arrived at this location. It was named the "Emancipator" because it was to complete with the

Continued on next panel



on the National Register of Historic Places.



The magnificent trees beside the station on Tulare and Santa Fe are carob or St. John's Bread trees. Santa Fe has been cultivating them for over three quarters of a century. They grew from seeds planted there in 1898 by Johannes Reimers, who brought them from Arabia. The soil is well suited for the two

trees, and no special care has been necessary. The female tree, large and full, yields fruit in the form of brown pods four to 12 inches long. The male tree is smaller, bears no fruit and serves only to pollinate the female tree.

The trees gained their name, St. John's Bread, from an early mistaken belief that the sugary pulp and seeds were the locust and wild honey on which John the Baptist survived in the wilderness. The pods were referred to as "husks" in the parable of the Prodigal Son. The trees are native to Asia Minor and Syria.

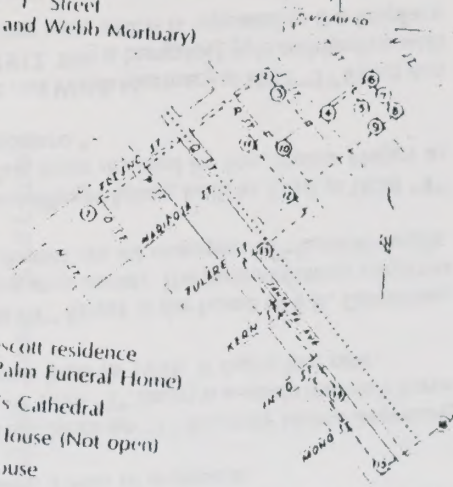
**14** Continuing down **Santa Fe to Inyo** there are two blocks of interesting old industrial buildings known today as **Warehouse Row**. First the **Wormser** building, built in 1899; next, the **Swift and Company** building (formerly Western Meat), circa 1910; and two-thirds of the block to Mono is occupied by the old **Fresno Consumer Ice Company** building built in 1903. This sturdy, thick building where ice was made to be delivered by horsedrawn ice wagons is being restored for a shopping mall.

**15** Continue down "P" Street or Santa Fe to Ventura. On the northeast corner of "P" and Ventura is the **Berven Rug Company** warehouse housed in an early 20th century red brick building. Note the "eyebrow" detail on the arched windows and doors.

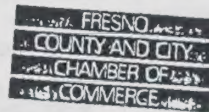
**16** At "R" and Ventura, housed in the old Blake, Moffit and Towne warehouse, is the **Spaghetti Factory**\*, a fitting place to end a walking tour. Not to be overlooked on this walking tour are numerous other interesting restaurants. There are two quaint old Basque hotels, **Yturri's** on "P" and Kern, and the **Santa Fe** on Santa Fe and Tulare. They both serve lunch and dinner family-style meals. The **Old Fresno Hofbrau** on Tulare and "R," and the **Mexican, Chinese and barbecue** restaurants in the **Plaza Shopping Center** at "U" and Tulare are all culinary delights.

\* Recipient of Preservations Award, presented by the Fresno City and County Historical Society in recognition of the owner's contribution to historic preservation in Fresno.

1. Water Tower
2. Brix Mansion (Private offices)
3. Brown shingle house (Not open)
4. 1050 "S" Street (Not open)
5. 1025 "T" Street (Not open)
6. 1060 "T" Street (Not open)
7. 1020 "T" Street (Not open)
8. 1002 "T" Street (Yost and Webb Mortuary)



9. F.K. Prescott residence (Harry Palm Funeral Home)
10. St. John's Cathedral
11. Collins House (Not open)
12. Meux House
13. Santa Fe
14. Wormser, Swift and Fresno Consumer Ice Company buildings
15. Berven Rug Company
16. Spaghetti Factory



Post Office Box 1469  
2331 Fresno Street, Fresno, California 93716  
209/233-4651

JPAX/2M

**FRESNO**  
County and City  
Chamber of Commerce

A Historic  
Tour of Fresno

**WATER TOWER**



25¢



The map shows the following streets and landmarks:

- Streets:** Fresno, Tulare, Kern, Mono, Ventura, Santa Clara, San Benito, Broadway, Fulton, Van Ness, N St, M St, I St.
- Landmarks:** Courthouse Park, William Saroyan Theater.
- Parade Route (Numbered Squares):**
  - 1:** Intersection of I St and Broadway.
  - 2:** Intersection of I St and Fulton.
  - 3:** Intersection of Van Ness and Fulton.
  - 4:** Intersection of Van Ness and Broadway.
  - 5:** Intersection of Broadway and San Benito.
  - 6:** Intersection of San Benito and Santa Clara.
  - 7:** Intersection of Santa Clara and Fulton.
  - 8:** Intersection of Santa Clara and Ventura.
  - 9:** Intersection of Santa Clara and I St.
  - 10:** Intersection of I St and Broadway.
- Arrows:** Indicate the direction of travel along the route. A large black arrow in the top left corner points towards the top of the map.

Saroyan's second boyhood home, from 1921 to 1926, located at 3204 E. El Monte Way at 2nd Street, is on the Fresno City and County list of Historic Places. It was the first home the Saroyan family owned in America. See the picture of this home inside this brochure.

Fresno Metropolitan Museum located at 1515 Van Ness Avenue, (209) 441-1444 (permanent Sanyan exhibit scheduled to open in the spring of 1991).

California State University Fresno, Special Collections Department, has one of the richest collections

Department Head, (209) 294-2595.

One of the largest collection of published works and manuscripts by Sanyal is in the Fresno County Library located at 2420 Mariposa Street (209) 488-3195.

Seminar courses are taught at Fresno State University as part of the Armenian Studies Program by Professor Dickran Kouymjian (209) 294-2609 and Harlow Der Mugrdechian, instructor.

Harcroft Library, custodian of Satoyan manuscripts and memorabilia, Dr. James D. Hart, Director, UC Berkeley, Berkeley, CA 94720; (415) 642-3781.

A biographical film on William Saroyan is available from Paul Kalinian, producer and photographer, (209) 442-1711.

William Sanyan Foundation, Robert Setrakian, President, 1905 Baker Street, San Francisco, CA 94115; (415) 398-1111, founded by Sanyan before his death to guarantee the preservation and dissemination of his literary legacy; John Leggett, WSF biographer, 1781 Patrick Rd., Napa, CA 94558; (709) 252-0599

The Fred Finch Youth Center (formerly the Fred Finch Orphanage) 3800 Coolidge, Oakland, CA 94602, phone 1 (415) 482-2244, recently held its Fourth Annual William Sanyan Festival of the Arts. Sanyan lived there five years from the age of three to the age of eight.

A very large selection of used Sanyan books and manuscripts are for sale at Monroe Books, 809 E. Olive, Fresno, CA 93728, (209) 441-1282, John Pezz, owner.



Please Help  
Join other "Friends of the William Saroyan Festival."  
Send \$25., \$50., \$100., or other \_\_\_\_\_ to:  
William Saroyan Festival, 920 E. Yale, Fresno, CA 93704. Thank you.

**I** Tour begins at the William Saroyan Theatre, 700 M Street at Inyo

**2** Site of former *Fresno Evening Herald*, SW corner of L & Inyo Streets

**3** Saroyan Monument in the SW corner of Courthouse Park, Van Ness and Tulare Streets

**4** Former Postal Telegraph site  
at 1036 Fulton Mall

**5** Saroyan's birthplace, Monday, August 31, 1908, at 625 Broadway.

**6** Former site of the First Armenian Presbyterian Church, the first Armenian church in California, located at the NW corner of Santa Clara and Fulton

**7** Former site of Emerson School, SE corner of Van Ness & Santa Clara (FWY 41 runs over part of this location; this site is designated with a sign.)

**B** Hye Quality Armenian Bakery, 2222 Santa Clara at L Street

**2** Former site of Saroyan's childhood home, 2226 San Benito (FWY 41 now runs over this site.)

**Valley Armenian Bakery**  
505 M Street at Santa Clara

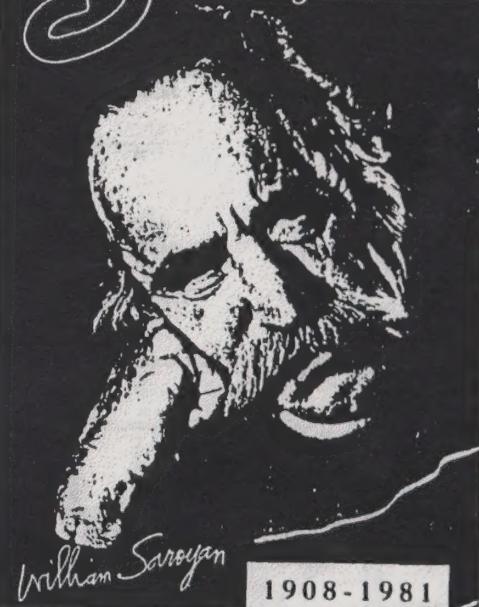
**Holy Trinity Armenian Apostolic Church, SW corner M & Ventura, listed on the National Register of Historic Places**

**12** Tour ends at George's Shish Kebab at Kern and N Streets in the Galleria

Tour signs by Vargas Studios.  
Bronze plaques by W-N Art  
Bronze.



William Saroyan Festival Committee  
The Fresno Free College Foundation  
P.O. Box 4364  
Fresno, CA 93744

[illegible]

1908-1981

**Pulitzer Prize  
Winning Writer**

•Annual Saroyan Festival Events

•Self Guided  
Saroyan Town  
Walking Tour

NON-PROFIT ORG  
U.S. POSTAGE  
**PAID**  
FRESNO, CA  
PERMIT NO. 487

FRESNO, CALIFORNIA



# Access and Land Use Plan

## Legend



Natural Area



Park Preserve



Recreation Area



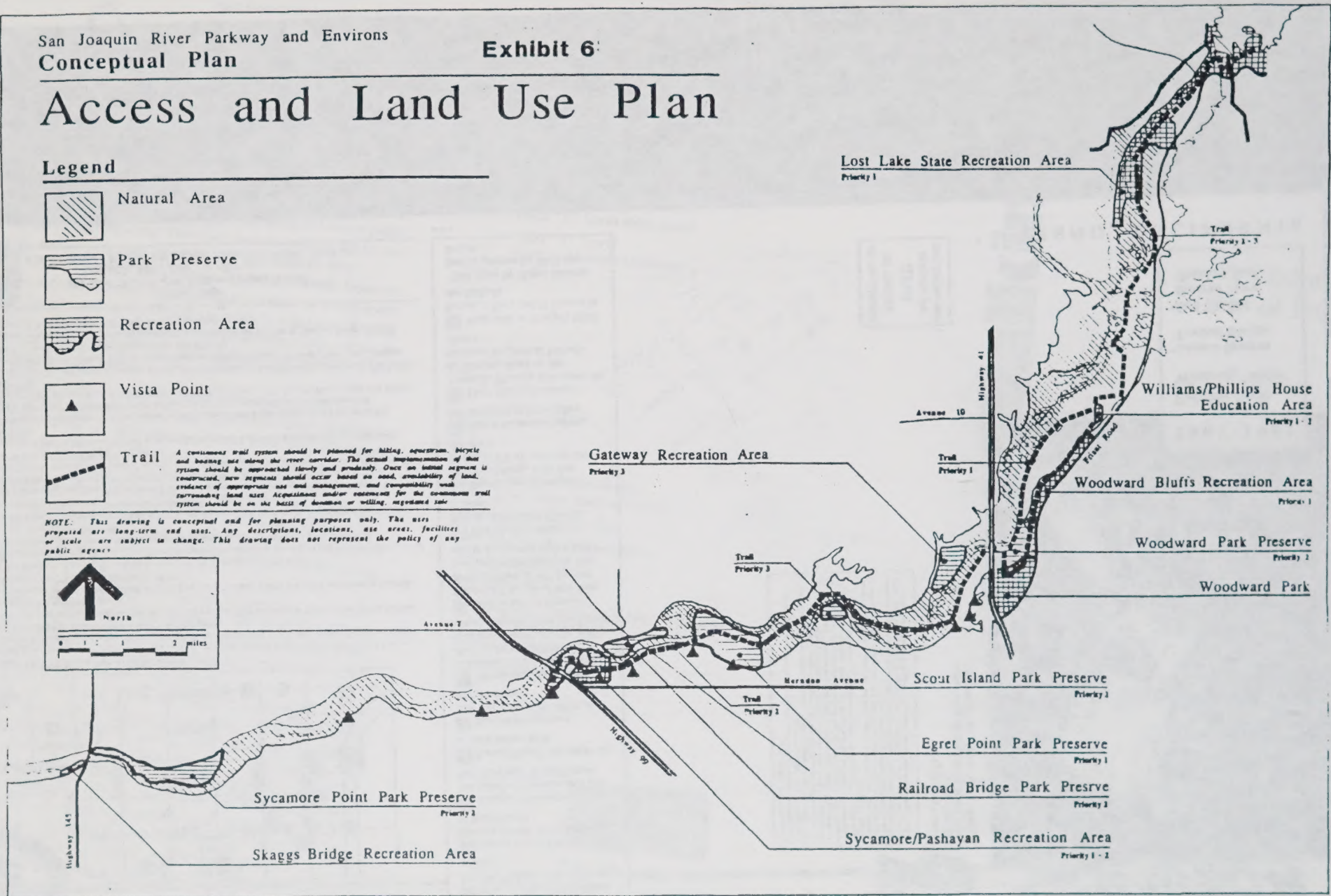
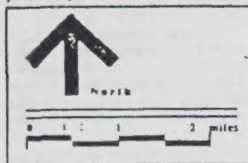
Vista Point



Trail

A continuous trail system should be planned for hiking, aquatics, bicycle and boating use along the river corridor. The actual implementation of this system should be approached slowly and prudently. Once an initial segment is constructed, new segments should occur based on need, availability of land, evidence of appropriate use and management, and compatibility with surrounding land uses. Acquisitions and/or easements for the continuous trail system should be on the basis of donation or willing, negotiated sale.

NOTE: This drawing is conceptual and for planning purposes only. The uses proposed are long-term end uses. Any descriptions, locations, use areas, facilities or scale are subject to change. This drawing does not represent the policy of any public agency.



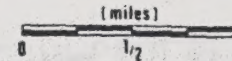


MAP #2

Exhibit 7

# SAN JOAQUIN BLUFFS ENVIRONS SPECIFIC PLAN

## CIRCULATION ELEMENT



BASE MAP SOURCE USGS TOPOGRAPHIC MAP

CITY OF FRESNO  
DEPARTMENT OF PLANNING & INSPECTION  
PLANNING DIVISION  
JANUARY 1980  
AUGUST 1982

### LEGEND:

FREEWAYS (99 AND 41)

EXPRESSWAY - 1/2 MILE ACCESS CONTROL  
(DESIGNATED TRUCK ROUTE)

SCENIC EXPRESSWAY

ARTERIAL

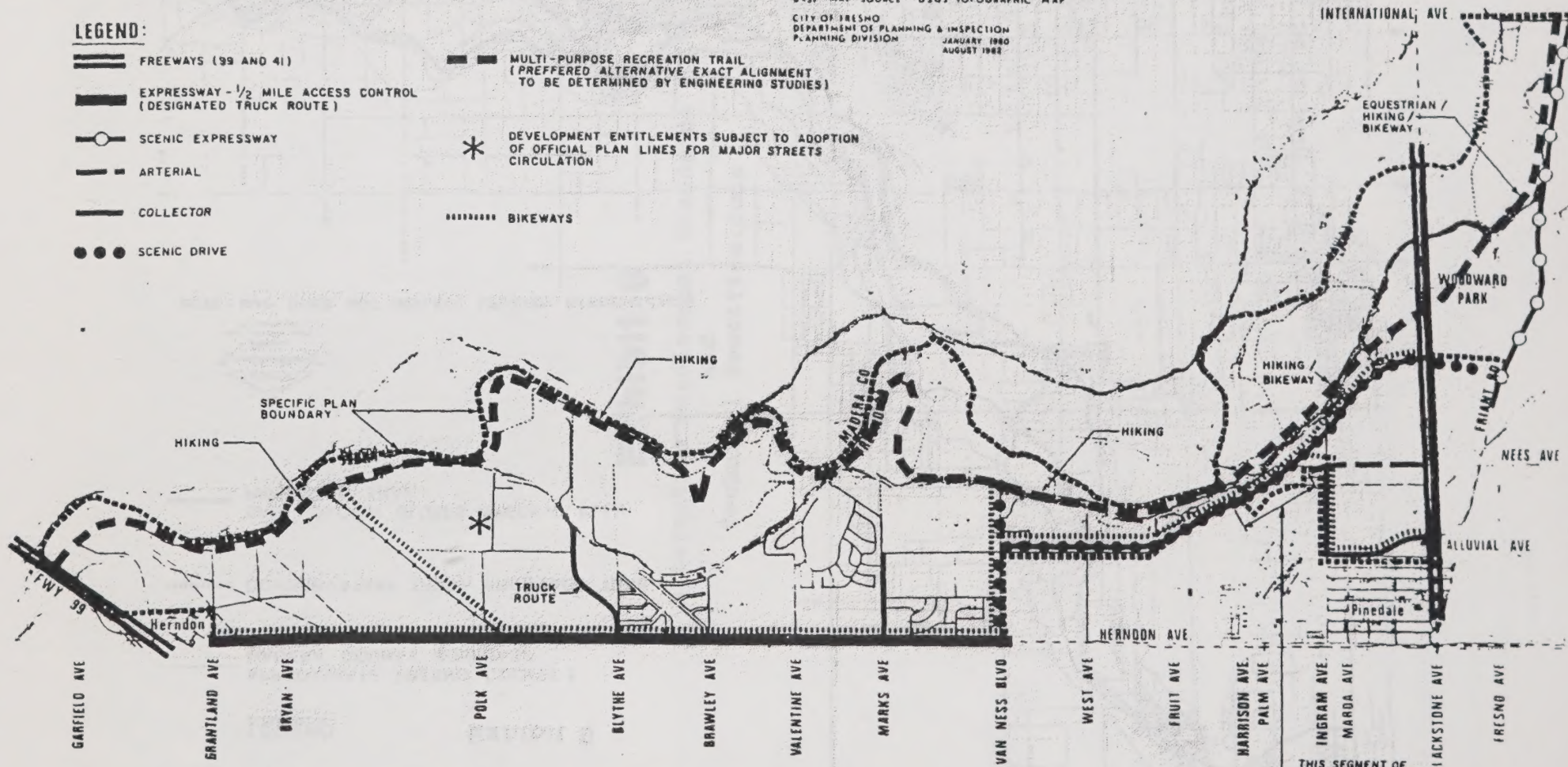
COLLECTOR

SCENIC DRIVE

MULTI-PURPOSE RECREATION TRAIL  
(PREFERRED ALTERNATIVE EXACT ALIGNMENT  
TO BE DETERMINED BY ENGINEERING STUDIES)

DEVELOPMENT ENTITLEMENTS SUBJECT TO ADOPTION  
OF OFFICIAL PLAN LINES FOR MAJOR STREETS  
CIRCULATION

BIKEWAYS



THIS SEGMENT OF  
SCENIC DRIVE TO BE  
ESTABLISHED BY OFFICIAL  
PLAN LINES



# SAN JOAQUIN RIVERBOTTOM / BLUFFS Potential / Alternative Trail Alignments

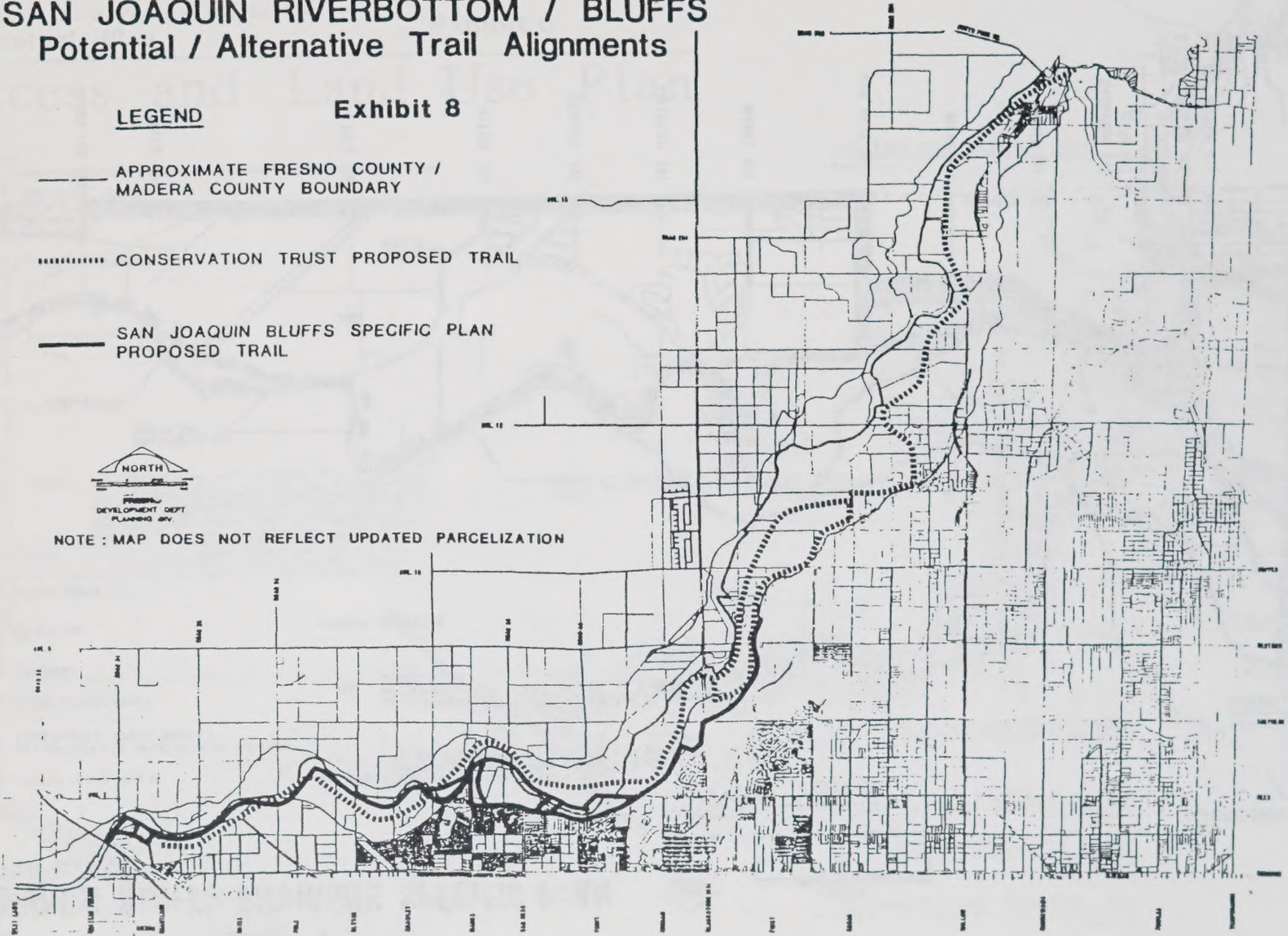
## LEGEND

## Exhibit 8

- APPROXIMATE FRESNO COUNTY /  
MADERA COUNTY BOUNDARY
- ..... CONSERVATION TRUST PROPOSED TRAIL
- SAN JOAQUIN BLUFFS SPECIFIC PLAN  
PROPOSED TRAIL



NOTE : MAP DOES NOT REFLECT UPDATED PARCELIZATION





## **Exhibit 9**

### **Alternative Development Standards and Technical Specifications**



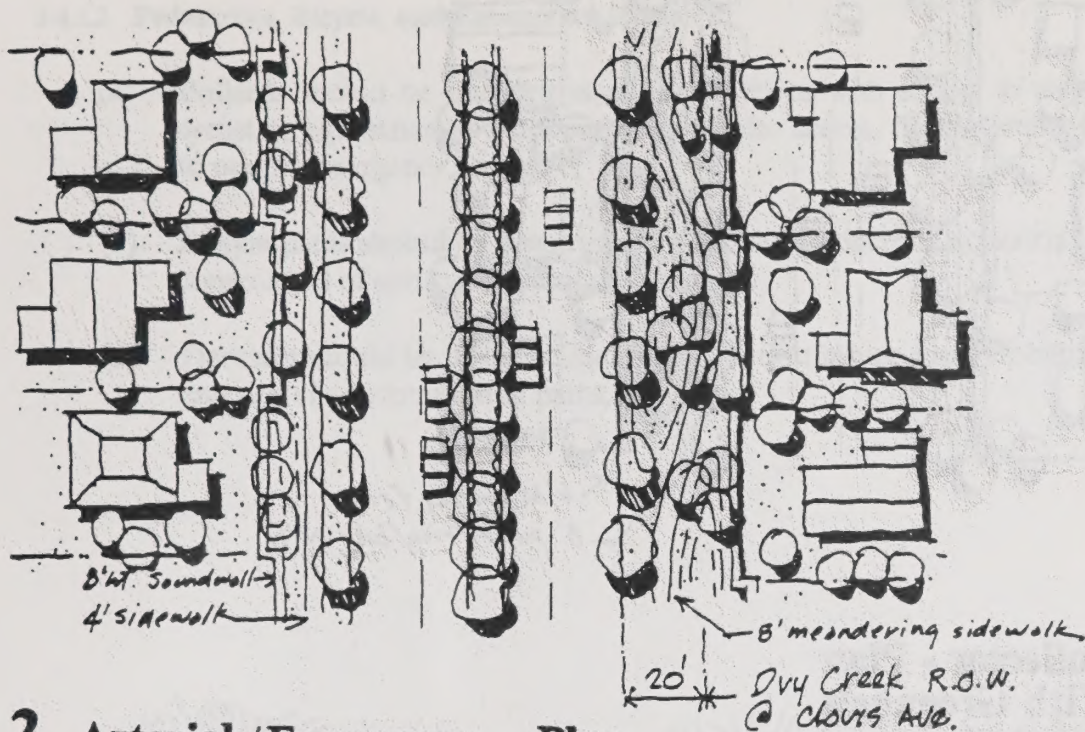


## Examples of Trail Separation



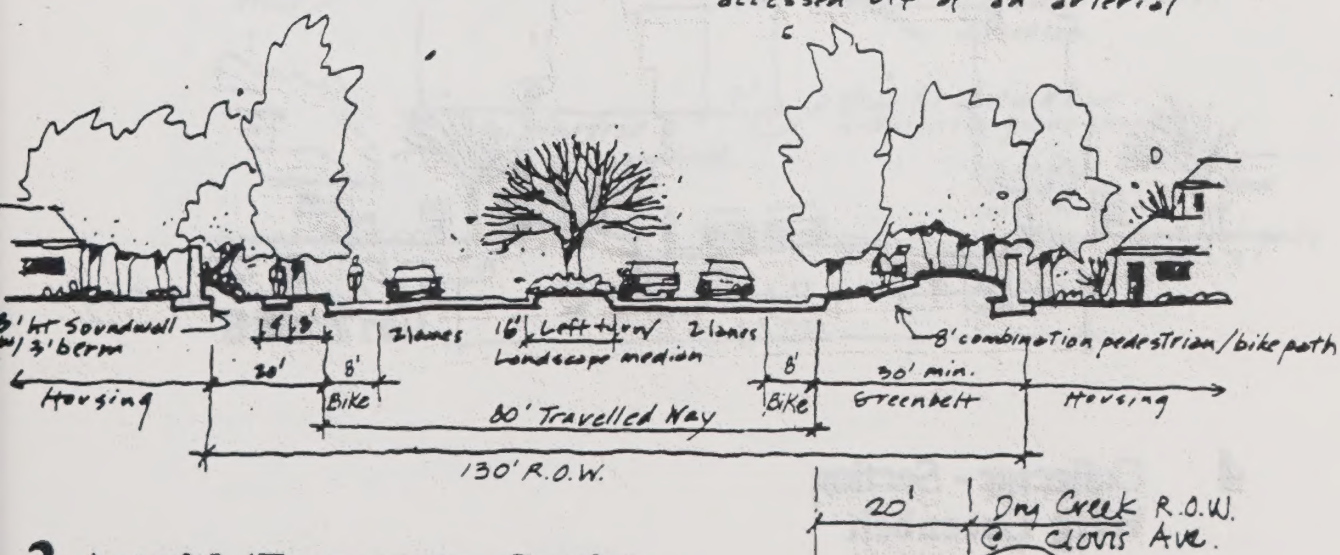
## Separation of Trails





## 2 Arterial / Expressway - Plan With Greenbelt

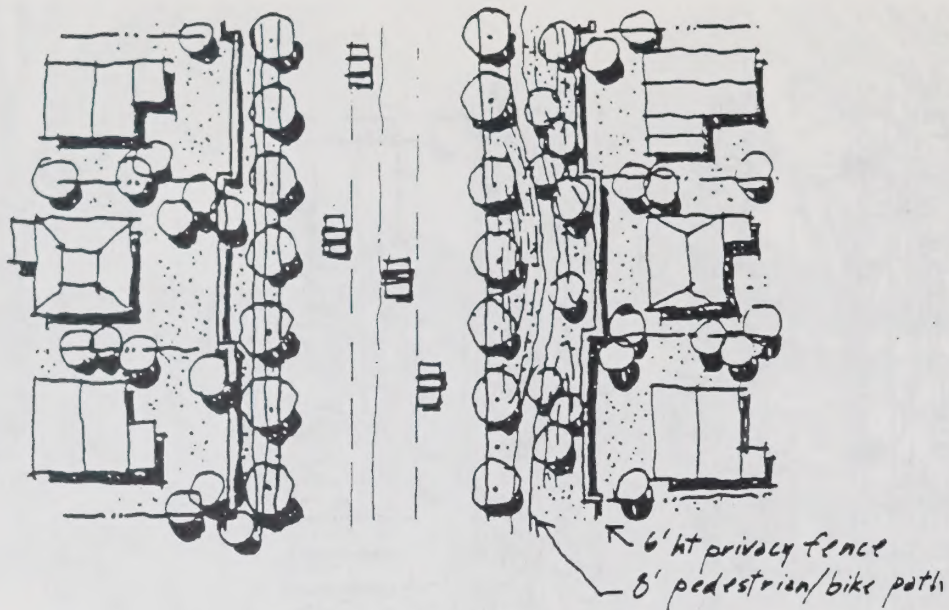
1. For landuses other than residential a sound wall is not necessary See 5.2.3.1.
2. No small parcels of any landuse shall be accessed off of an arterial



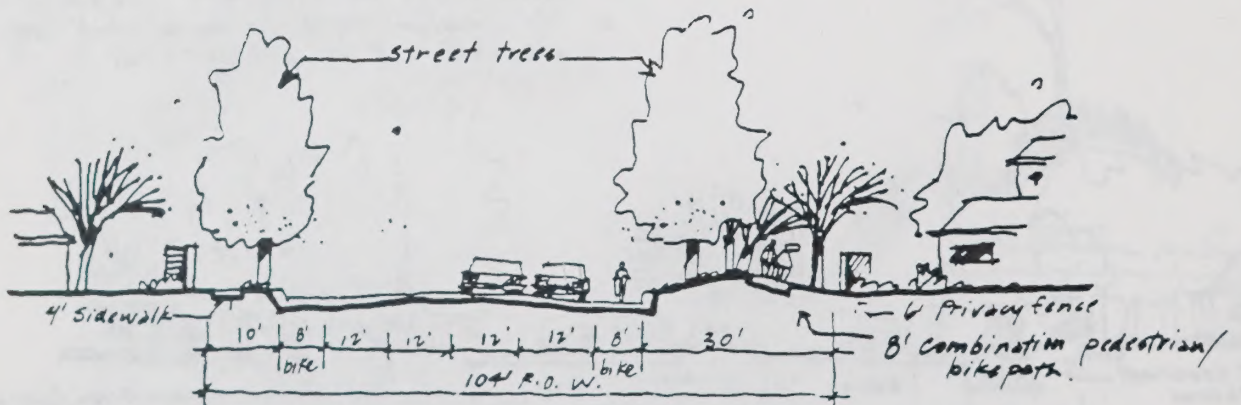
## 2 Arterial / Expressway - Section With Greenbelt

HERNDON-SHEPHERD S.P.





#### 4 Collector - Plan With Greenbelt



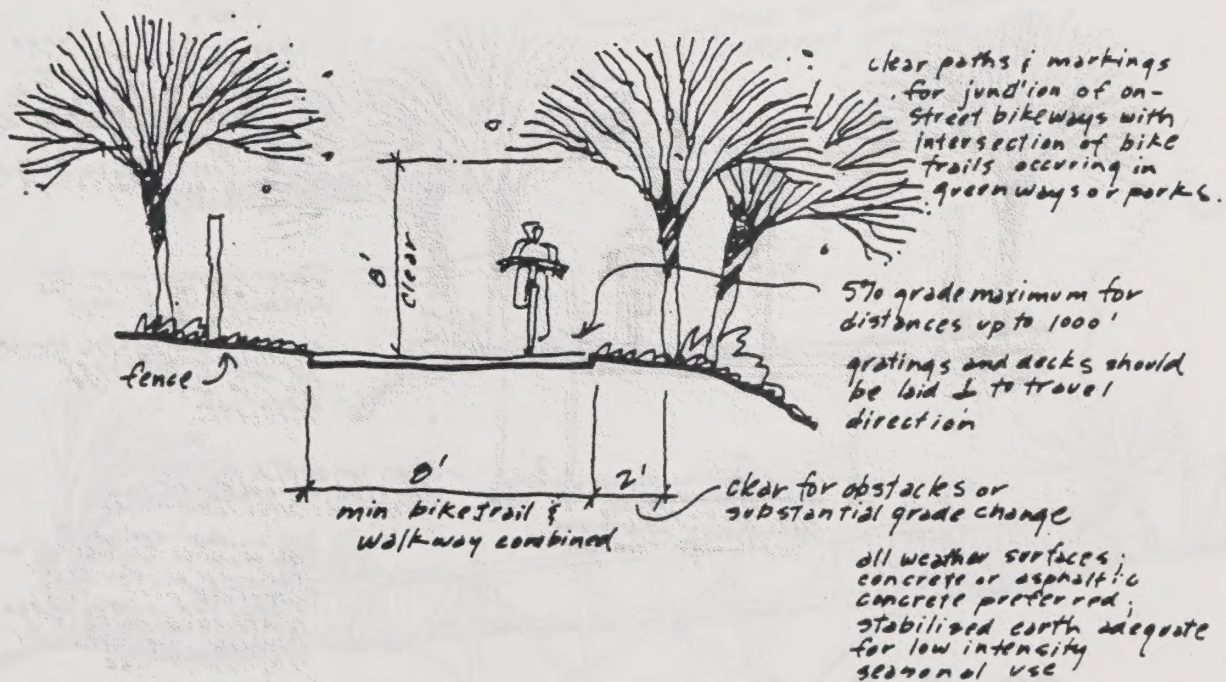
#### 4 Collector - Section With Greenbelt

HERNDON - SHEPHERD S. P.



#### 5.4.1.2 Pedestrian, Bicycle, and Equestrian Paths

- (a) Bollards should be installed at all intersections with streets to alert the pedestrian cyclist or equestrian and discourage vehicular access. Bollards should be removable to permit emergency access.
- (b) Bicycle paths should be constructed of asphaltic concrete; equestrian trails should be constructed of earth or decomposed granite.
- (c) Plantings should be designed and maintained to insure good visibility at intersections and prevent obstruction of paths.



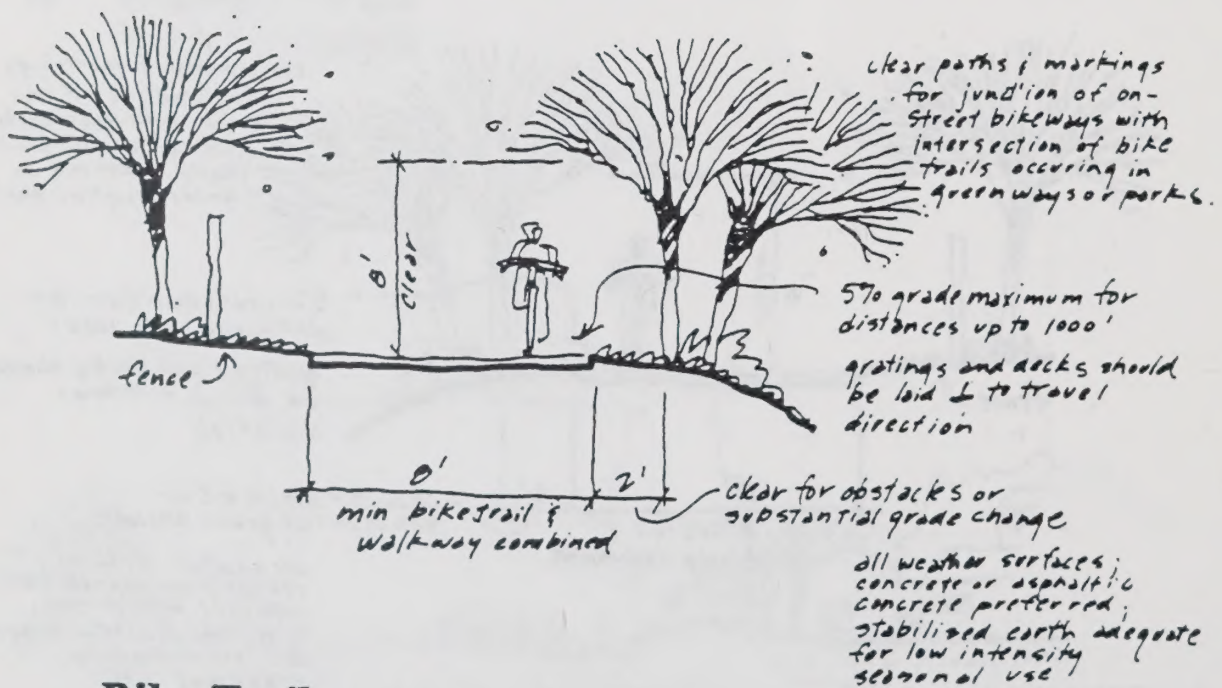
**Bike Trail**

HERNDON-SHEPHERD S.P.



#### 5.4.1.2 Pedestrian, Bicycle, and Equestrian Paths

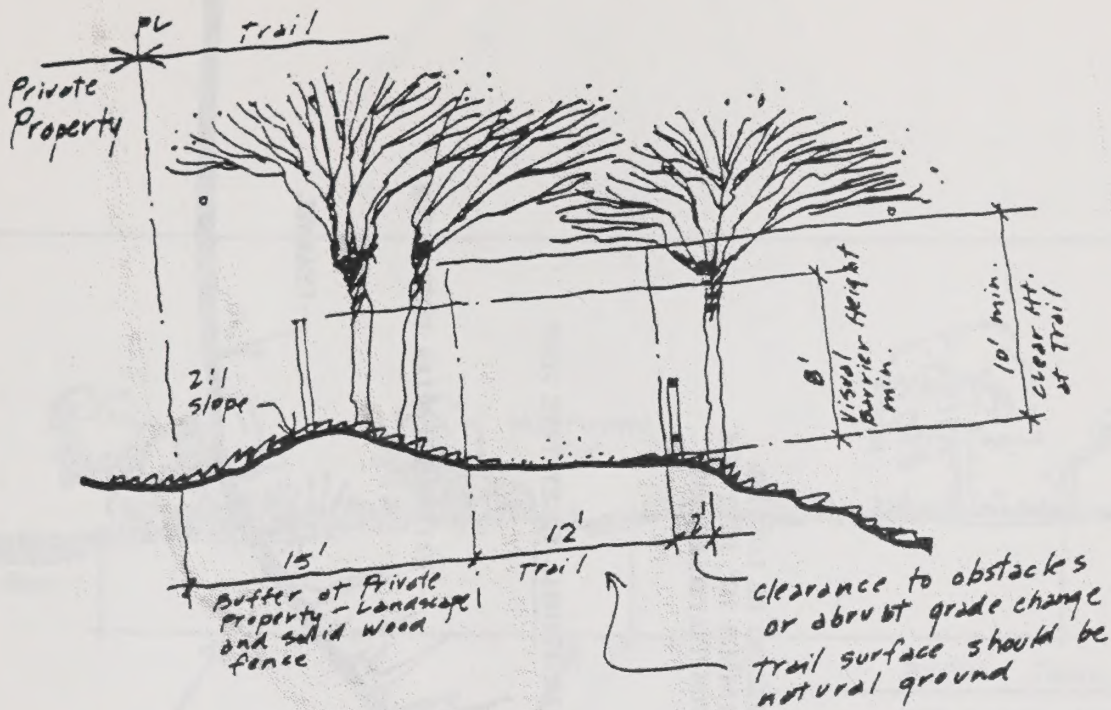
- (a) Bollards should be installed at all intersections with streets to alert the pedestrian cyclist or equestrian and discourage vehicular access. Bollards should be removable to permit emergency access.
- (b) Bicycle paths should be constructed of asphaltic concrete; equestrian trails should be constructed of earth or decomposed granite.
- (c) Plantings should be designed and maintained to insure good visibility at intersections and prevent obstruction of paths.



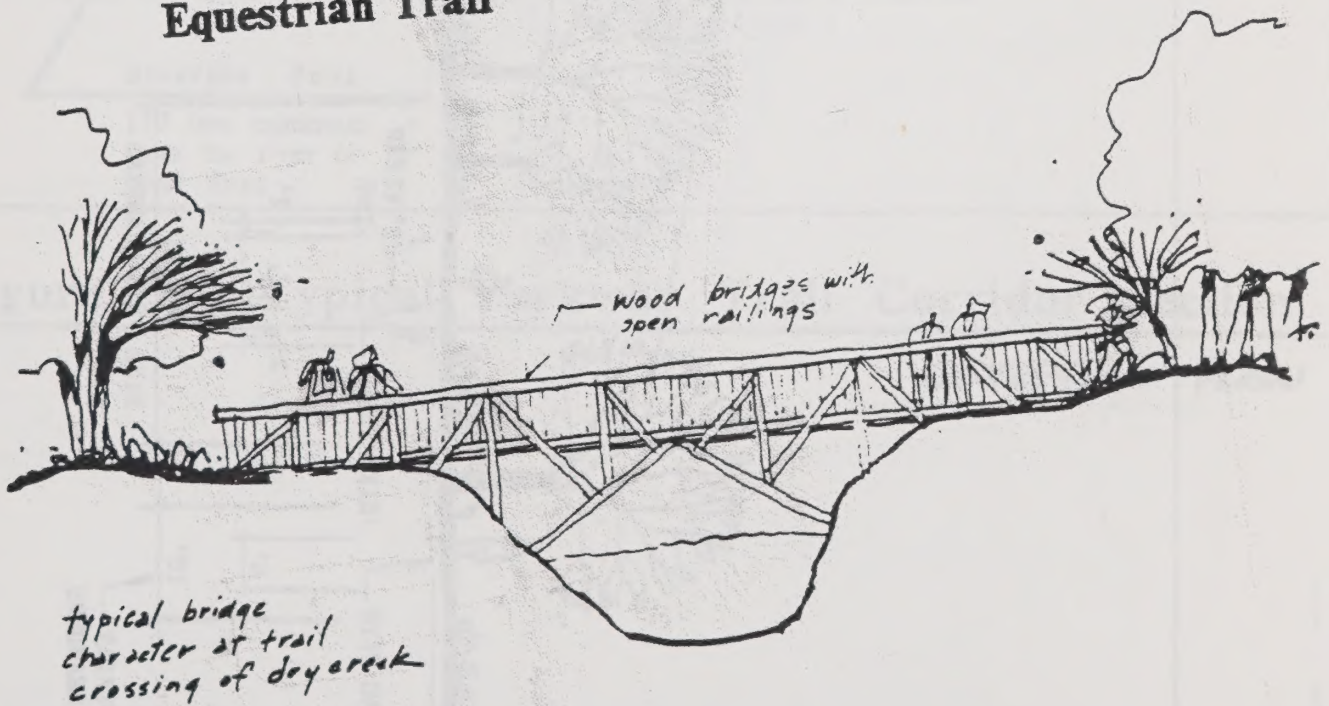
**Bike Trail**

HERNDON-SHEPHERD S.P.





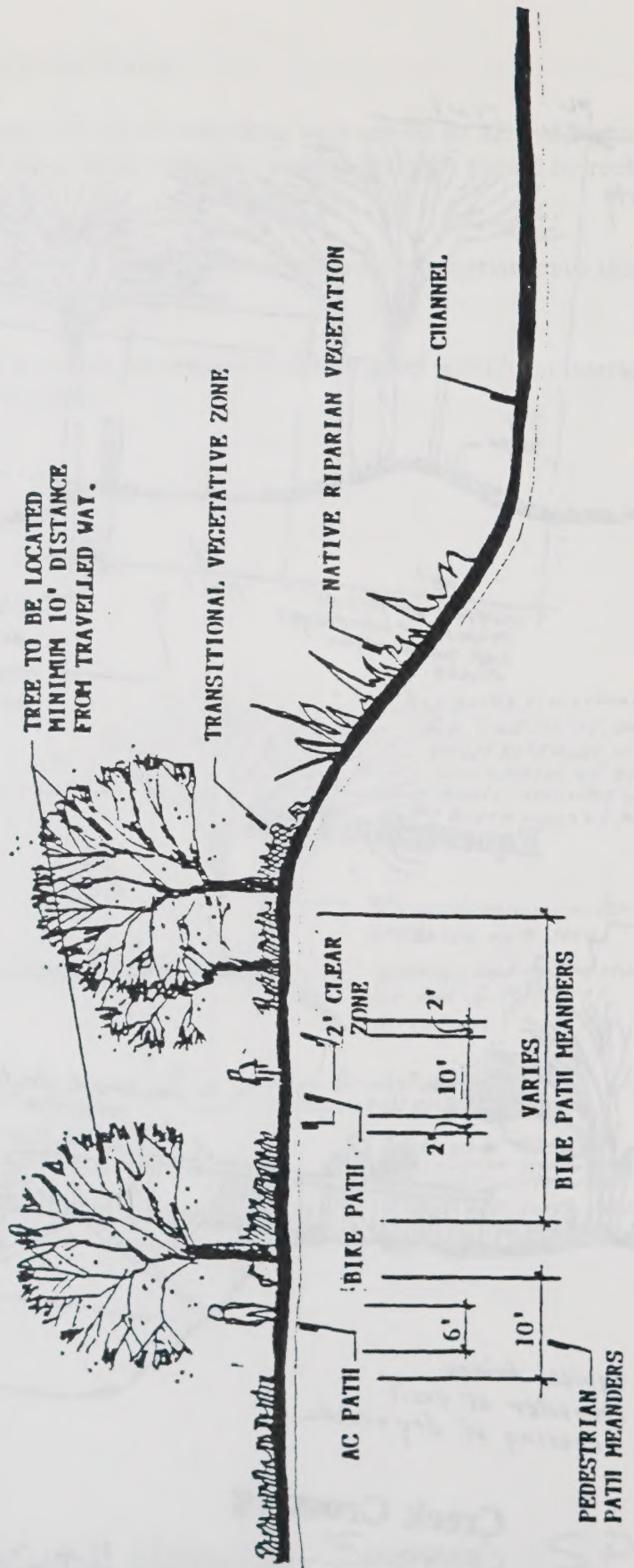
## Equestrian Trail



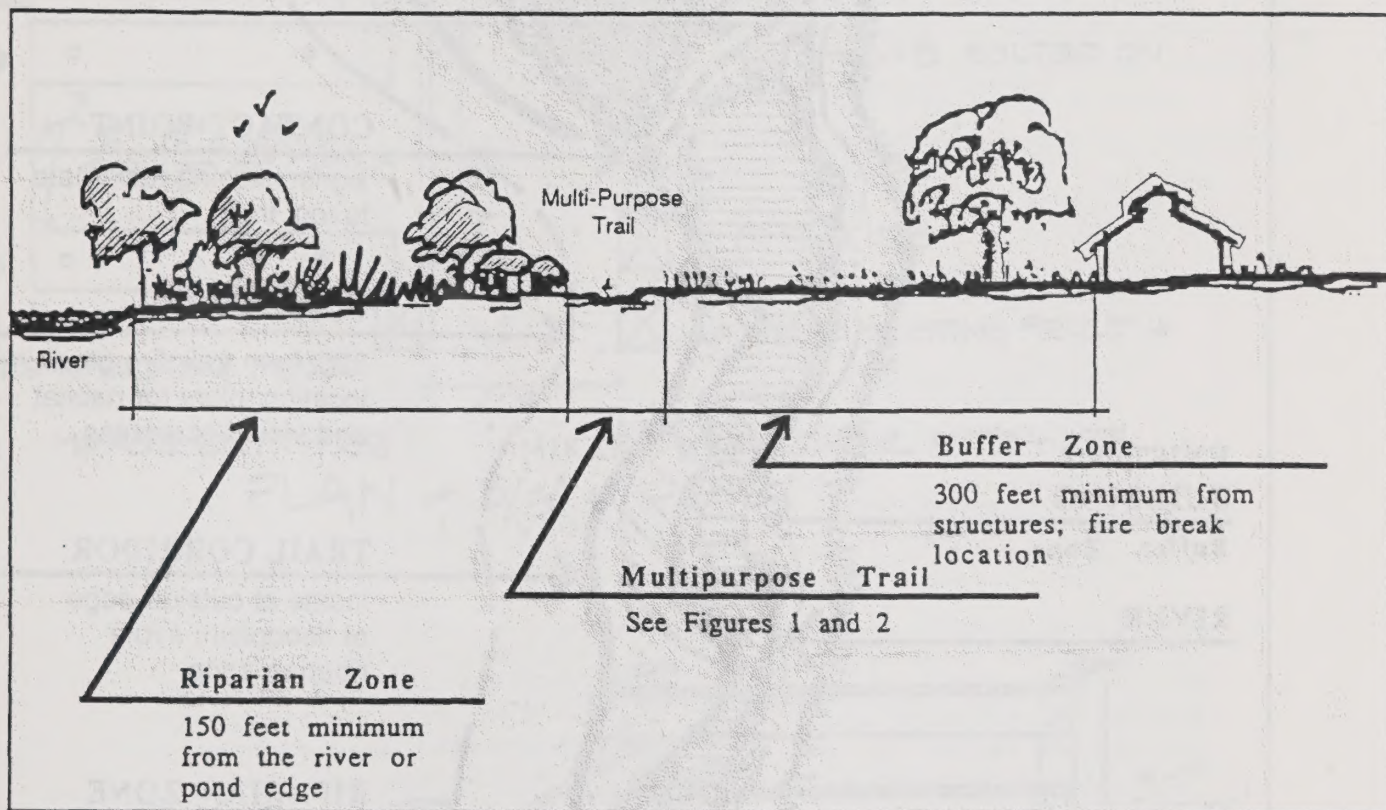
## Creek Crossing

HERNDON-SHEPHERD S.P.









**Figure 3: Typical Parkway Trail Corridor Section**



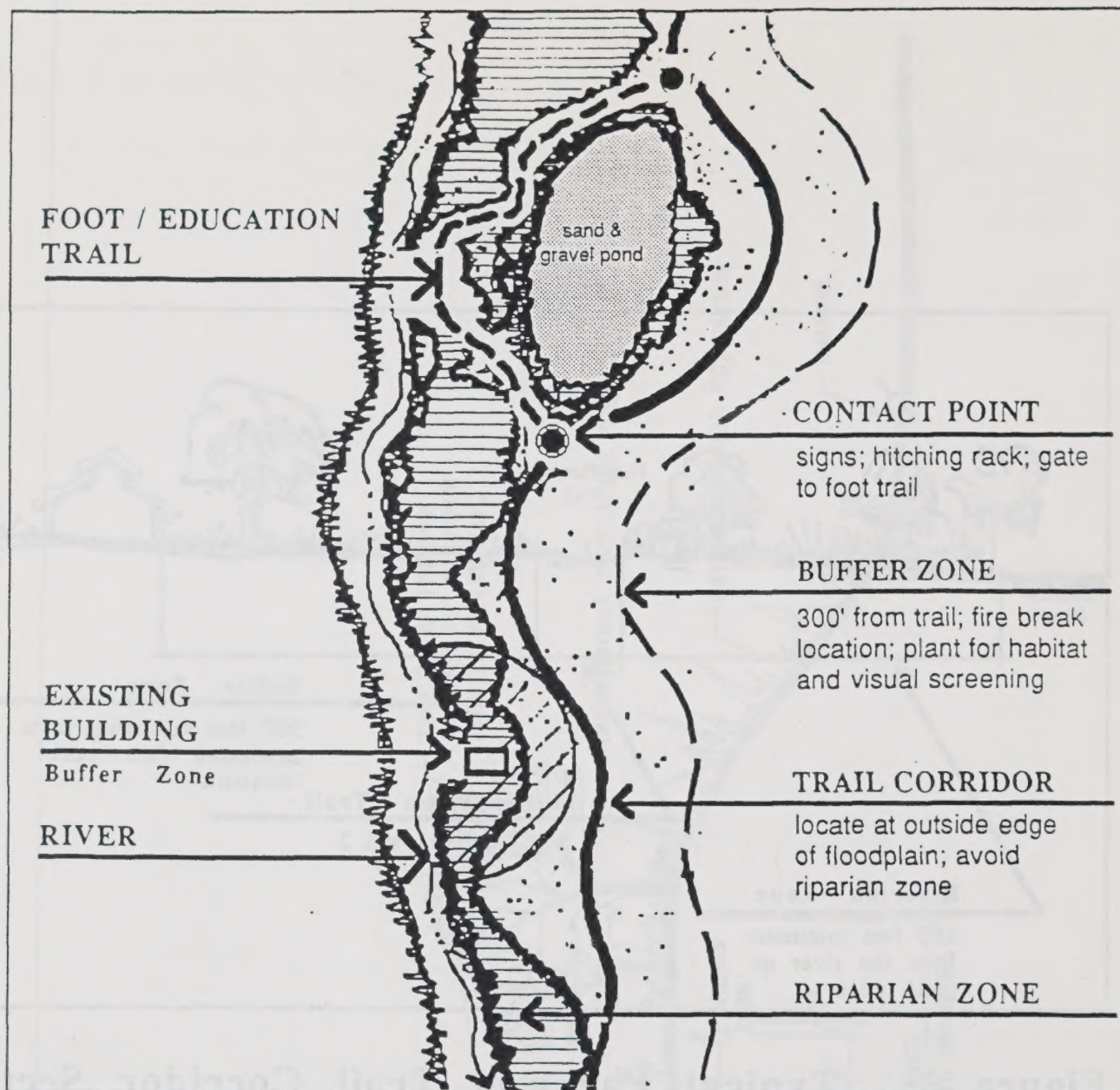
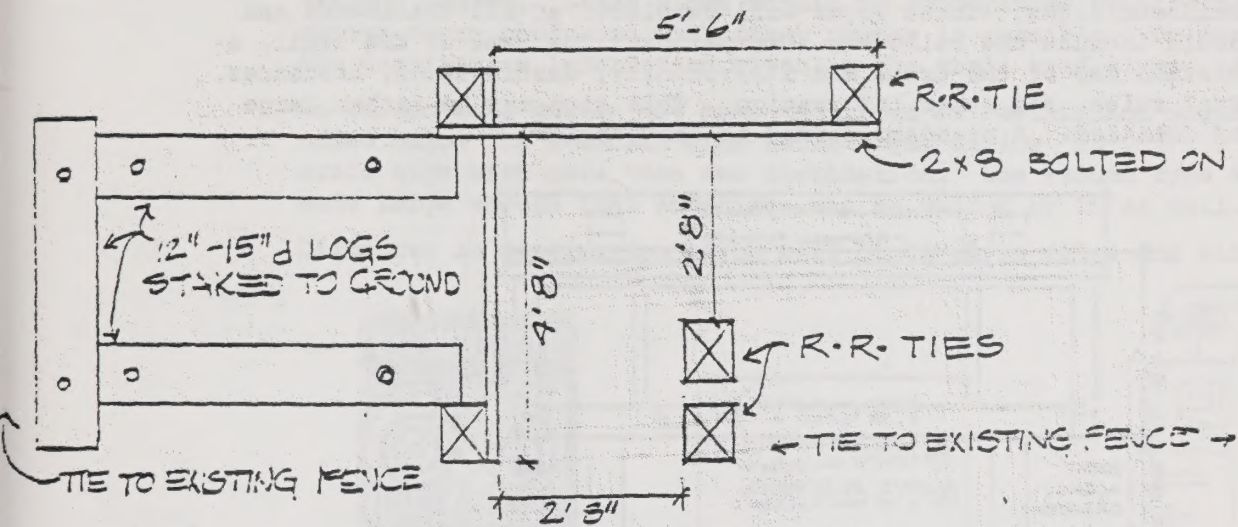


Figure 4: Typical Trail Parkway Corridor Plan

CONCEPTUAL PLAN



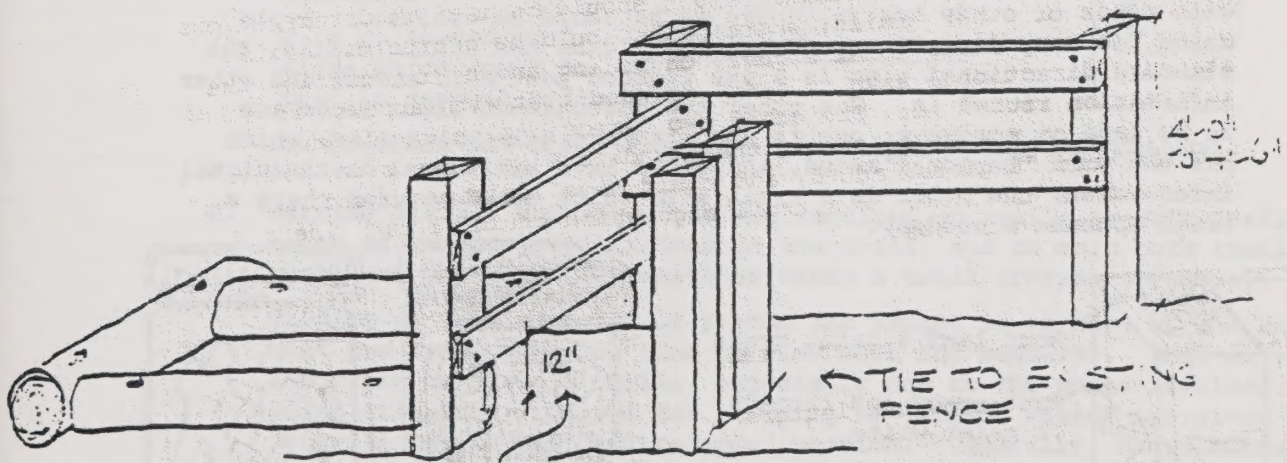
Addendum



HORSE ENTRANCE

HIKER - WHEELCHAIR ENTRANCE

PLAN - 3/3" = 1'-0"



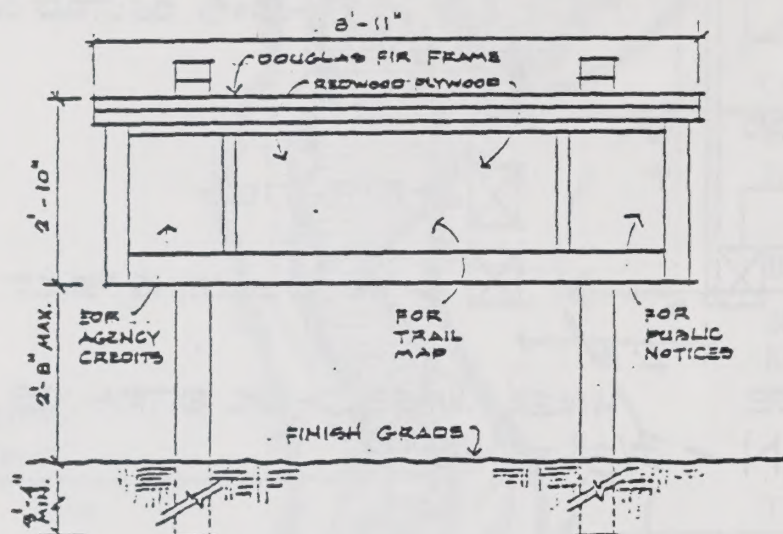
PERSPECTIVE

MOTORCYCLE BARRIER WHICH  
ALLOWS TRAIL USER & WHEELCHAIR  
ACCESS

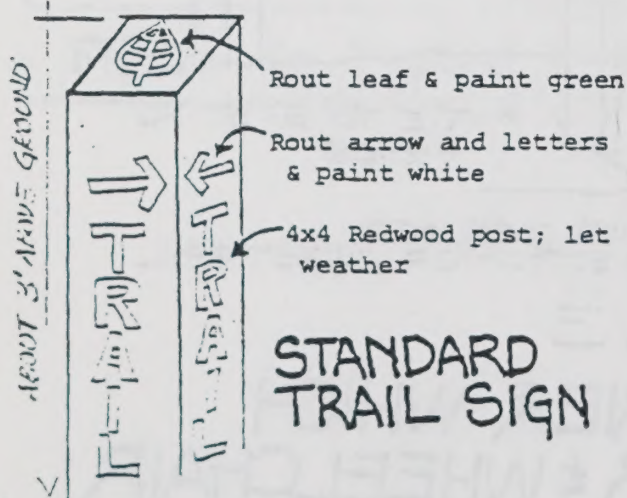


## Types of Signs:

- a. Trailhead Signs: These signs will be placed at all trailheads and should include the following information: The name of the trail, a location map of the trail and its vicinity, destinations, distances, trail rules, and other information. This sign may be rather large and detailed. A standard format is shown below.



- b. Directional Signs: Directional signs should be used at intersections with roads or other trails, where paths could be confused. Avoid using too many directional signs. On riding and hiking trails, the standard directional sign is a 4x4 redwood post with arrows and other information routed in. The other two directional signs shown are to be used on roadways; one is the standard Bike Route sign, which has the word "Regional" added, and could have additional destinational information; the other is a trail sign which could be used where a trail crosses a roadway.



011-1  
24" x 18"  
24" x 6"



14  
24" x 24"  
24" x 6"

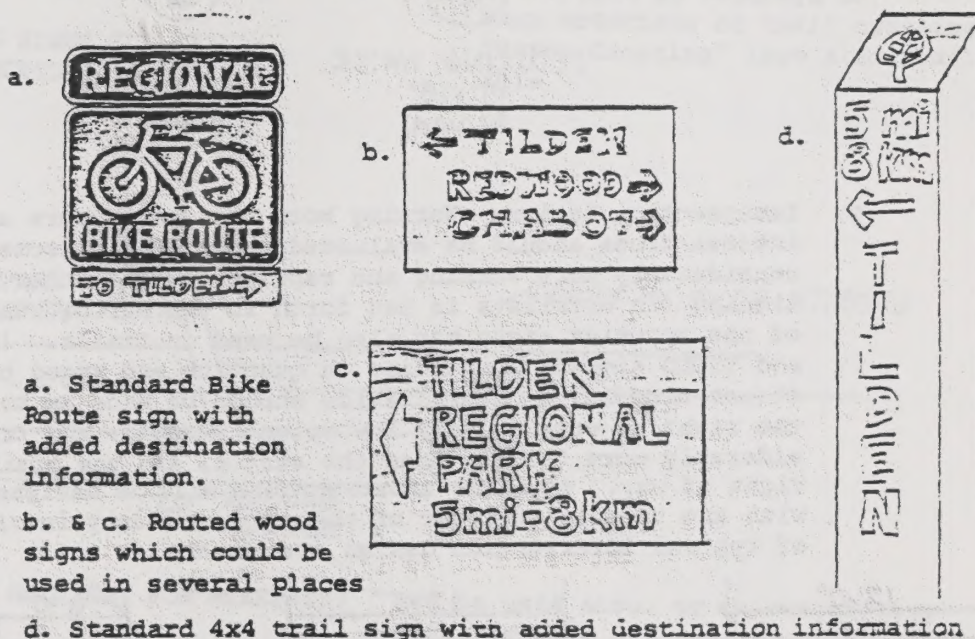
See also the  
M.U.T.C.D. for  
instructions on placement  
and use.



- c. **Destination Signs:** Destination signs will be placed at appropriate locations to inform trail users of the distance and destinations on various routes. These signs should be accompanied by directional arrows where confusion with other routes is possible. On many trails, the destination information given on the trail head plaque is sufficient.

On-street bike routes may have two types of destination signs: a strip added below the standard Bike Route sign, saying "To . . .", or a separate sign with more than one destination. The second type should be made large enough that motorists can be guided by it as well.

Distances on destination signs will be given in miles and kilometers.



- a. Standard Bike Route sign with added destination information.
- b. & c. Routed wood signs which could be used in several places
- d. Standard 4x4 trail sign with added destination information
- d. **Warning Signs:** Warning signs are required on trails to warn trail users of hazardous conditions on the trail, and to warn both trail users and motorists of locations where a trail crosses a roadway.

Signing on trails should be placed far enough in advance of the hazard that the trail user has time to slow down and maneuver. This is very important on bicycle trails, especially due to the speed involved. Sight distances required for stopping at various speeds are given the "Bicycle Trails Design Standards" section. Generally, bicycle trails should be designed for 20 mph speeds, which means that the warning signs should be 120 feet ahead of the hazard. On paved bicycle trails, warnings should be painted on the pavement, as well as signed. A 2 foot wide clear shoulder should be maintained along the edge of a bicycle trail; if structures protrude into this shoulder area, they should be made more visible to the cyclists by painting them white or yellow.

A 4" x 4" yellow metal reflector is available in the sign shop (007-code number) for use on gates, bollards, and other obstructions to make them more visible. This is most important on or near vehicle access roads where night visibility is essential.



- f. Informational Signs: This type of sign may be mileage markers or may point out the location of water, telephone, emergency services, rest areas, etc.

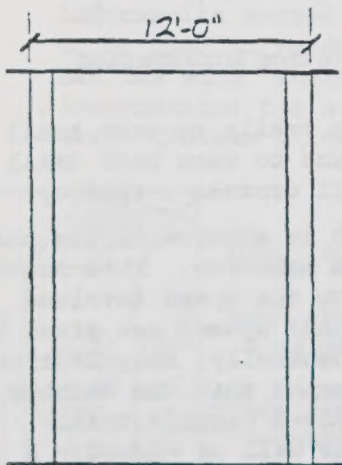


DRINKING WATER  
15" x 15"  
6" diam.

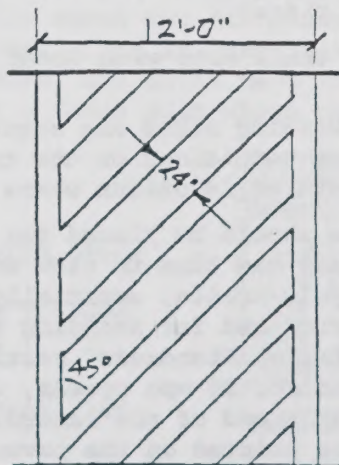


CAMPGROUND  
15" x 15"  
6" diam.

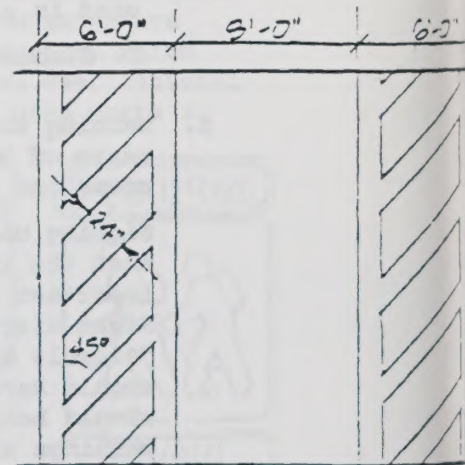
- g. Intersection Design: Warning both the trail users and motorists of intersections should be evaluated individually; some will require considerably more warning and regulation than other intersections. Signing for motorists is set forth in the MUTCD; scaled down versions of the motorist signs may also be used on trails. (Especially STOP and YIELD signs.) Depending on quantity and speed of both trail and street traffic, a determination should be made as to which route has the right of way; in very low volume streets, the trail may carry considerably more traffic than the street, and the trail may have the right of way. Specific intersections will be designed in cooperation with the traffic engineer of the city or county involved. Diagrams of typical intersection design are shown.



a) STANDARD CROSSWALK



b) BICYCLE & HIKING TRAIL  
CROSSWALK; FOR GREATER  
VISIBILITY.



c) RIDING & HIKING TRAIL  
CROSSWALK; FOR GREATER  
VISIBILITY.

## VARIOUS CROSSWALKS

NOTES: STRIPING TO BE WHITE, 12" IN WIDTH  
USE b) & c) ON HIGHER SPEED  
ROADS, SUCH AS RURAL ROADS  
AND FOR MID-BLOCK CROSSING





W3-1



W3-2



W11-1

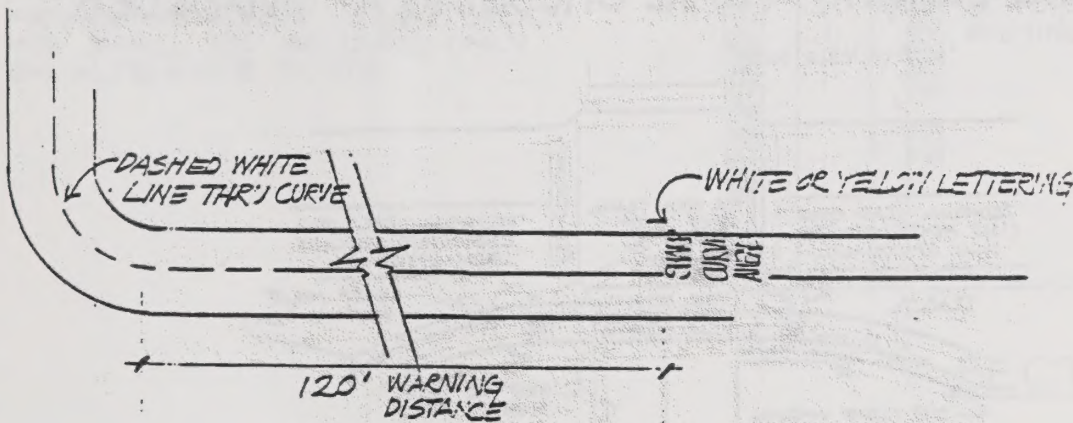


W11-2

30"x30" is standard size of these signs to be used on roadways; a 15"x15" size can be used on bike trails.

# TYPICAL WARNING SIGNS FOR TRAIL-ROADWAY INTERSECTIONS

To be used on roadways to warn motorists of trail crossing. "Horse Crossing" logo also available.



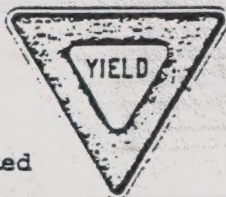
# TYPICAL WARNING MARKINGS FOR BIKEPATHS

May be used alone or in conjunction with signing.

e. Regulatory Signs: STOP and YIELD signs are the most commonly used regulatory signs. These are shown below; these standard signs may be used in a scaled down version where a trail crosses a road. Other regulatory signs which may be used on trails include prohibitions such as "No Dogs" or "No Smoking", or the "No Parking" sign shown below.



R1-1



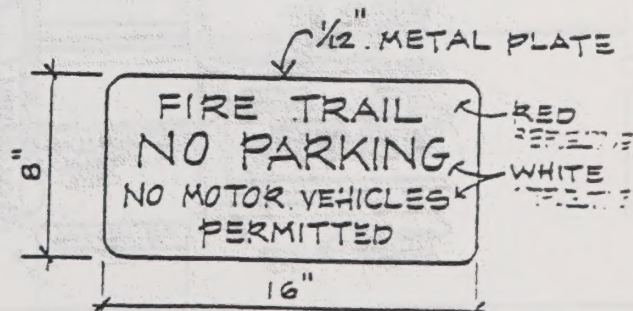
R1-2

Red  
White

24"x24" or  
18"x18"

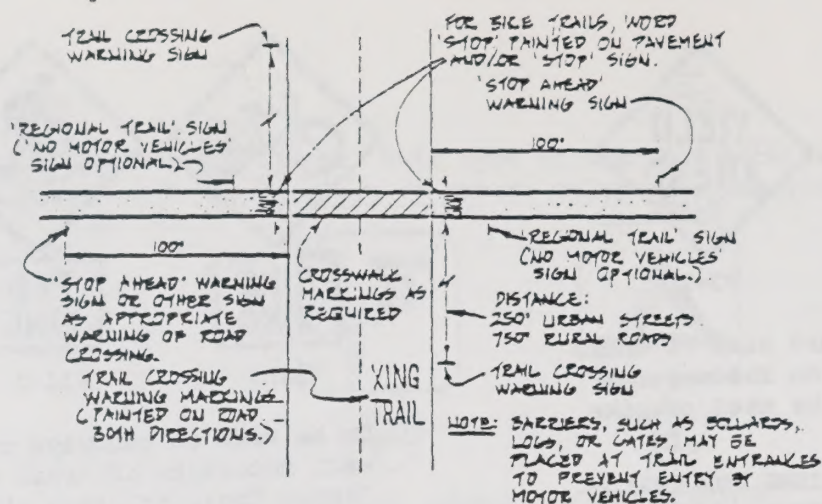
36"x36"x36" or  
18"x18"x18"

For roadway or trail use.

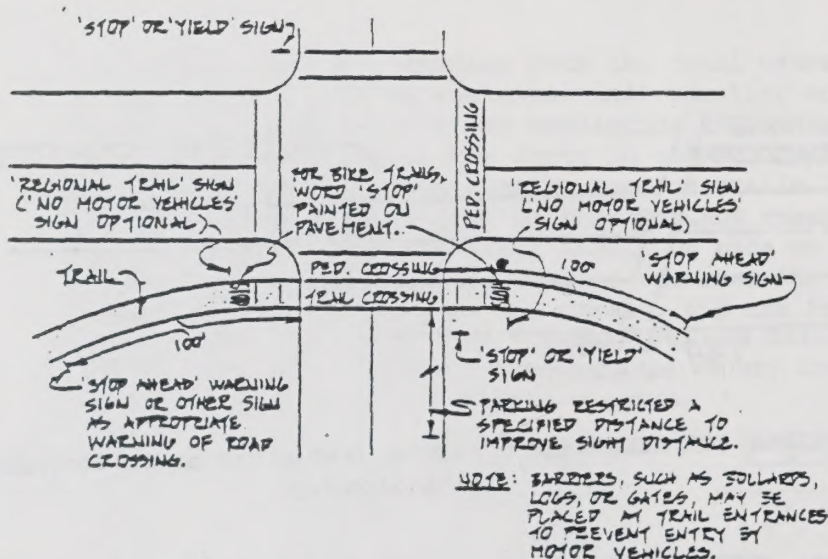


This is a standard sign which should be installed on all fire trail gates. Additional reflectors may be desirable on some gates, where night visibility is essential.

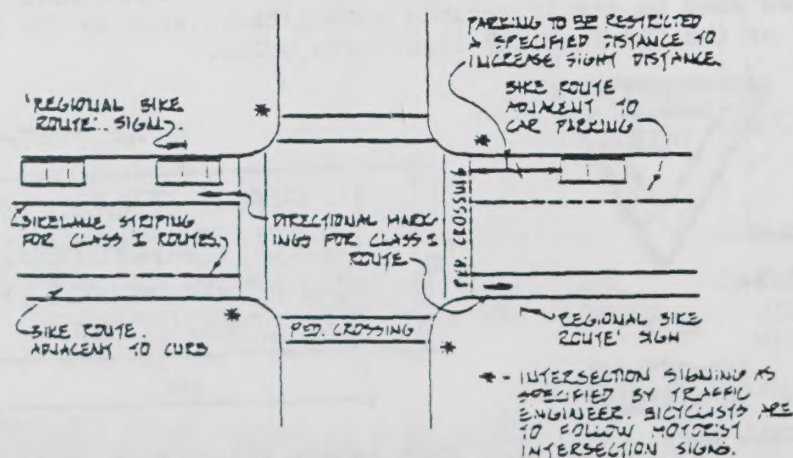




## TYPICAL SIGNING-TRAIL CROSSING AT MID-BLOCK



## TYPICAL SIGNING-TRAIL CROSSING AT INTERSECTION



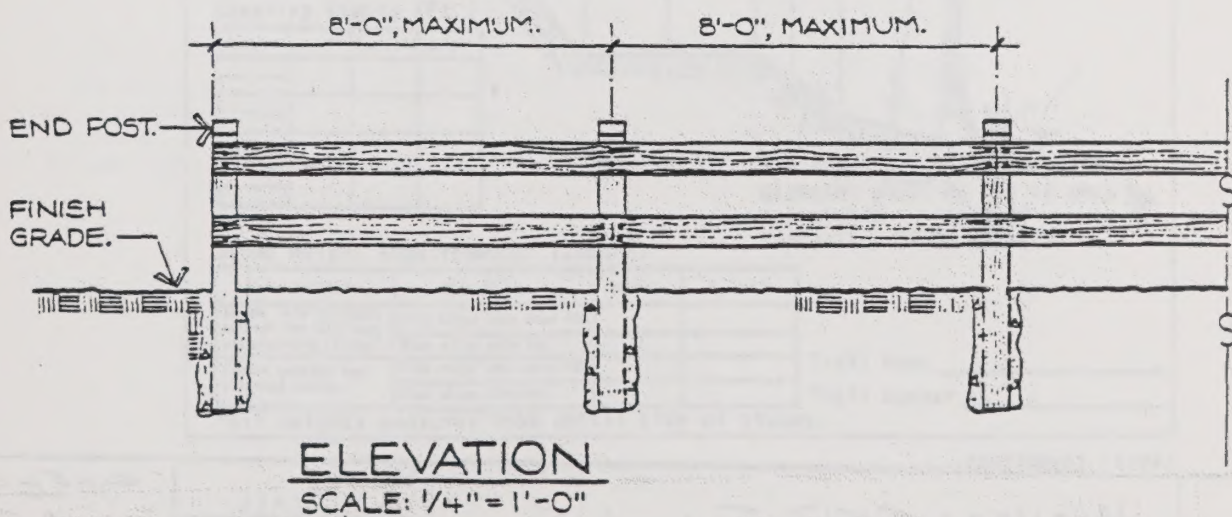
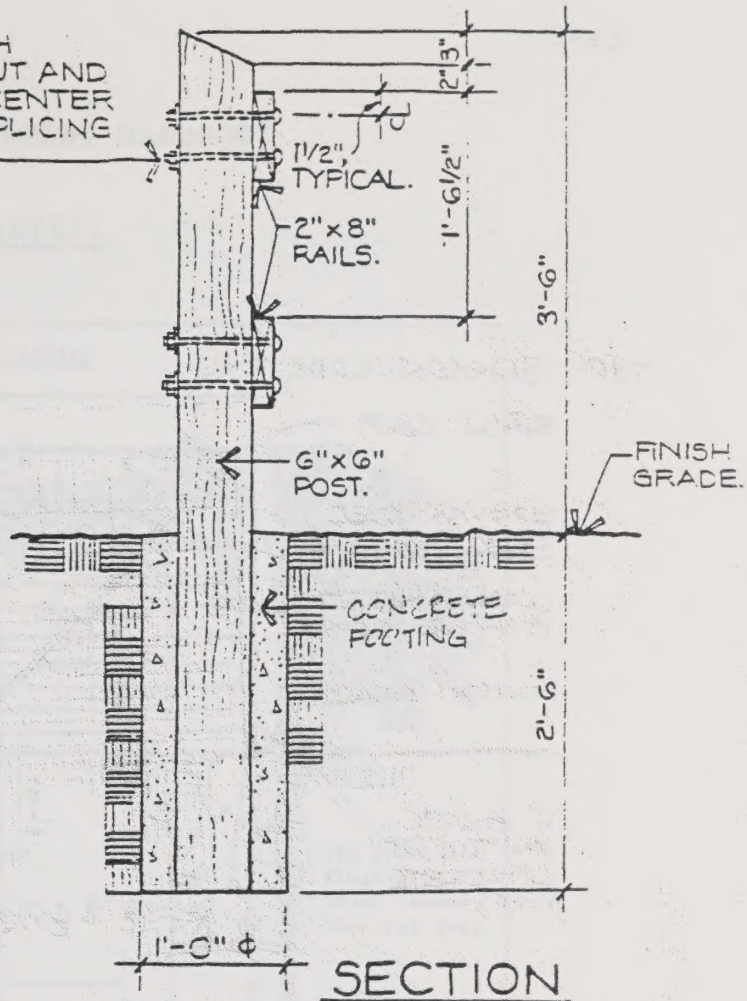
## TYPICAL SIGNING-ON STREET BIKE ROUTE CROSSING



1/2"  $\phi$  x 8" CARRIAGE BOLT WITH  
TUFNUT TN-50 SECURITY NUT AND  
WASHER. BOLTS TO BE ON CENTER  
OF POST EXCEPT WHERE SPLICING  
OCCURS.

NOTE:

SPLICING OF RAILS SHALL OCCUR  
ONLY ON CENTERLINE OF POST.  
PROVIDE 2 BOLTS FOR EACH RAIL  
MEMBER AT EVERY SPLICE. SPLICING  
SHALL BE ALLOWED ONLY  
ON ALTERNATE POSTS.



TWO (2) RAIL FENCE

FRESNO-LOUIS METEORITE TRAIL

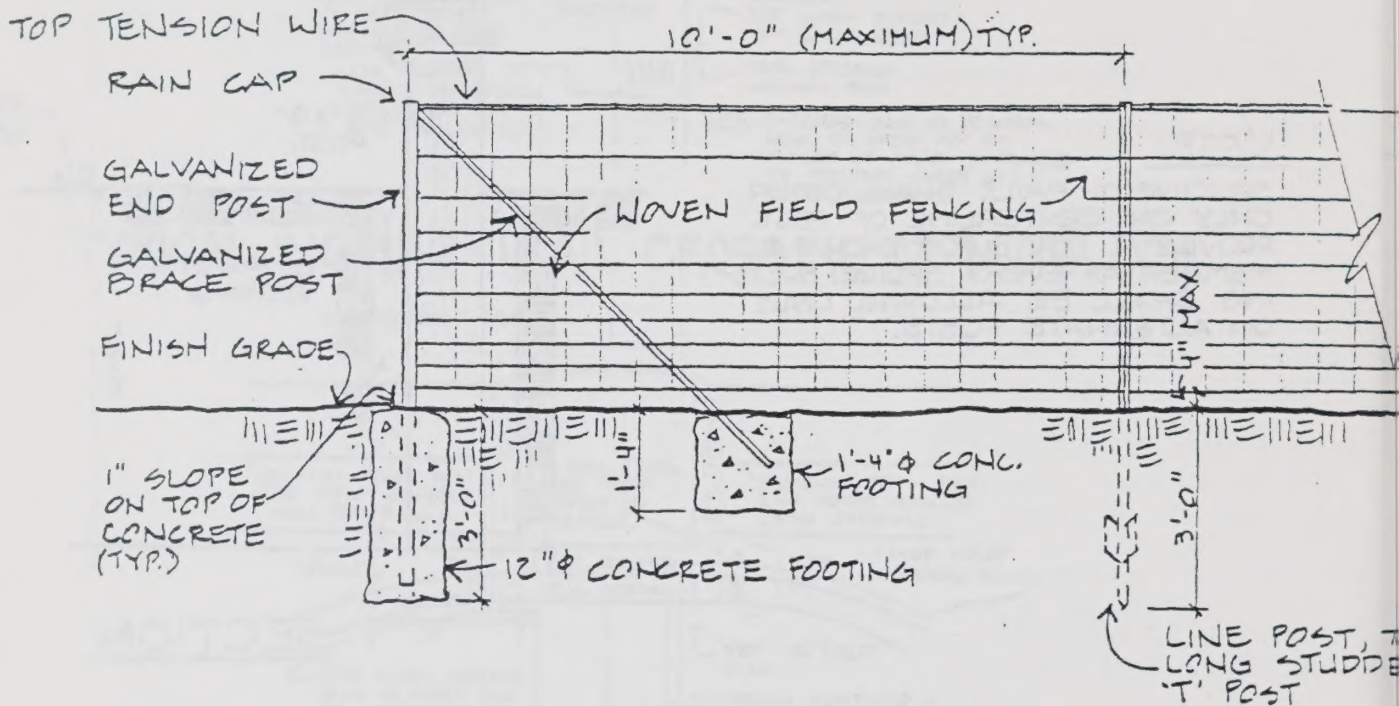
SCALE  
AS SHOWN

DATE  
2-20-20

SHEET

1





WOVEN FIELD FENCING

FRONTIER TRAILS MANUAL

SCALE  
NO SCALE  
2-28-70

SHEET  
5



## TRAILS MANAGEMENT HANDBOOK

Exhibit 1

USDA - Forest Service

Clearing Limits

Do not cut trees over \_\_\_ in. diameter if they are over \_\_\_ feet from the centerline (both sides).

Clearing Limit Uphill

Clearing Limit Downhill

Vertical Clearing Limit

Trailway

Trailbed

Saw branches flush with trunk rather than cut tree.

Clearing Limits (Ft.)

| Station | Uphill | Downhill | Height |
|---------|--------|----------|--------|
|         |        |          |        |
|         |        |          |        |
|         |        |          |        |
|         |        |          |        |
|         |        |          |        |
|         |        |          |        |
|         |        |          |        |
|         |        |          |        |

All trees \_\_\_ in. or less in diameter shall be cut if they are within \_\_\_ feet of centerline (both sides).

Stump Height Requirements\* (Inches)

| Stump Position                                                | Side Slope               | Uphill | Downhill |
|---------------------------------------------------------------|--------------------------|--------|----------|
| Stumps left in place between the trailway and clearing limits | Side slope less than 10% |        |          |
|                                                               | Side slope over 10%      |        |          |
| Stumps outside the clearing limits                            | Side slope less than 10% |        |          |
|                                                               | Side slope over 10%      |        |          |

Trail Name \_\_\_\_\_

Trail Number \_\_\_\_\_

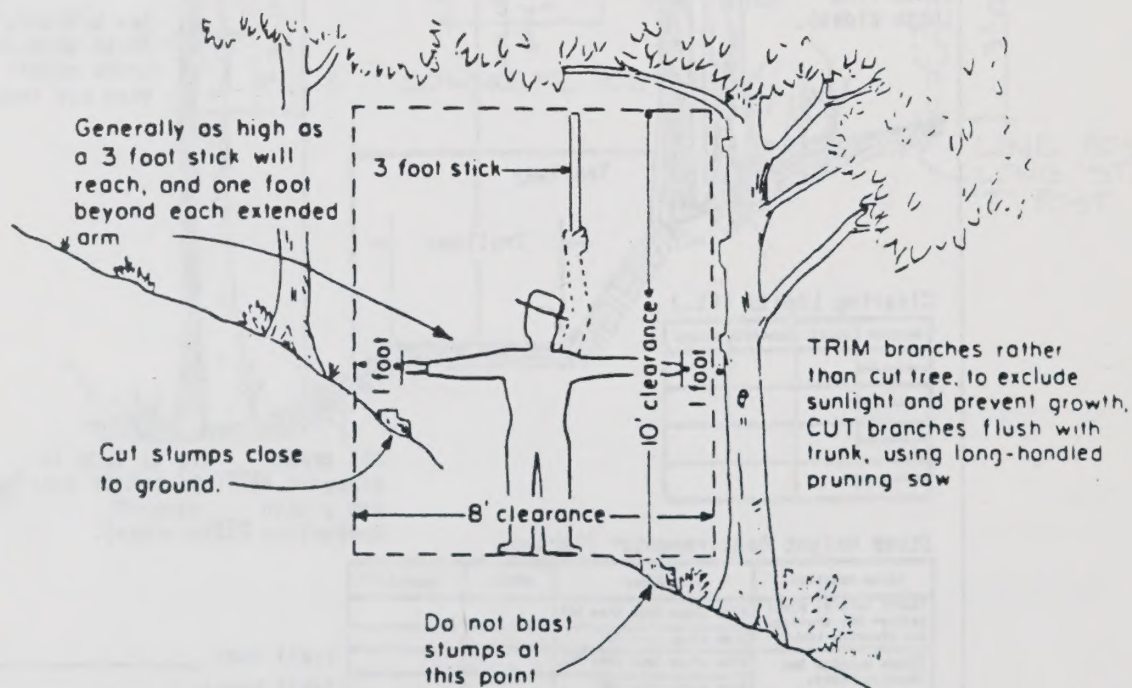
\*All heights measured from uphill side of stumps.

FS-7700-62 (6/84)



## H-9114-1 - TRAILS

C. Cleared Travel Way. Width of clearing will vary with the topography. A trail through a wooded area should be located so as to avoid cutting trees. When this is not possible, the clearing should follow the standard shown.

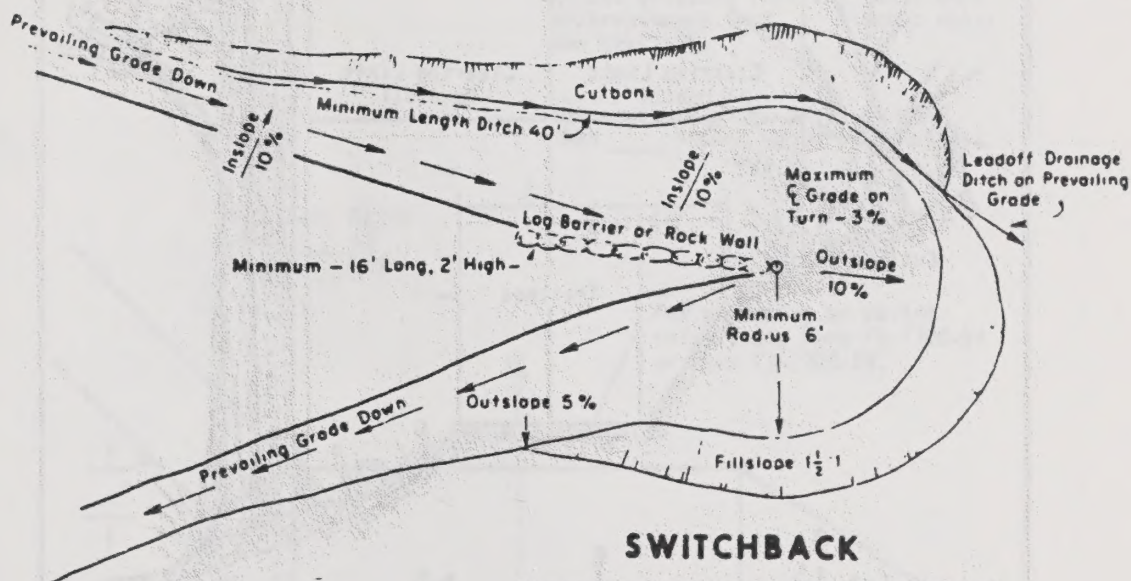


## CLEARING STANDARD



## H-9114-1 - TRAILS

D. Switchbacks. Design switchbacks with a curve radius as long as possible with an absolute minimum of 6 feet for nonmechanized trails and 8 feet for trails requiring mechanized maintenance and use. Keep legs separated by trees, brush, and other natural barriers which prevent rocks from upper legs from endangering travelers below. (See Parts I-B5 and VI-D.)



Minimum Standards - Log Barrier or Rock Wall

1. Minimum Log Diameter 12"
2. Minimum Rock Diameter 12"
3. Minimum Rock Base Width 24"



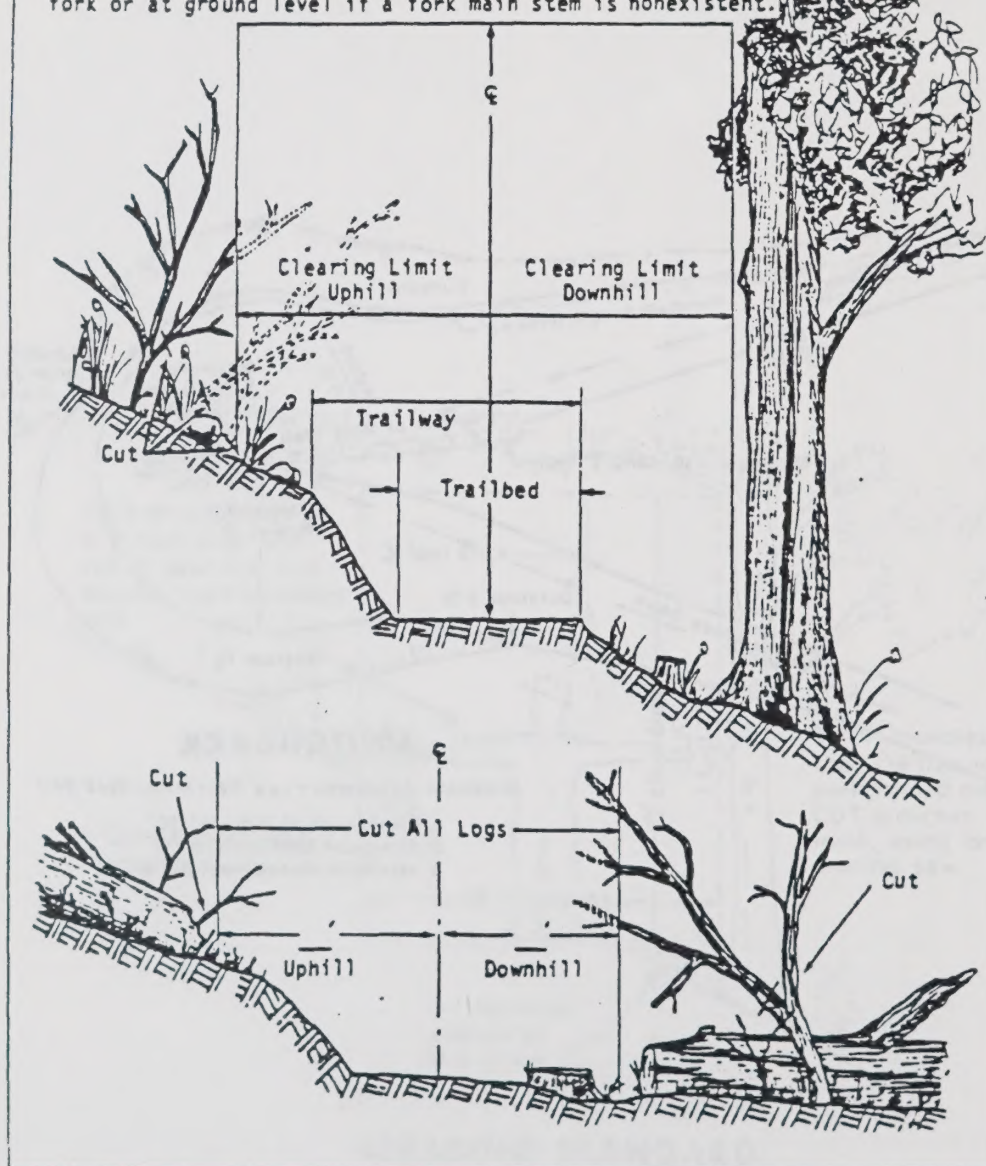
## TRAILS MANAGEMENT HANDBOOK

Exhibit 2

USDA - Forest Service

- Clearing Limits

Brush extending into the clearing limits that is over 12 inches in height and 1/2 inch in diameter shall be cut flush with the main stem at a branch fork or at ground level if a fork main stem is nonexistent.



FS-7700-62 (6/84)



## TRAILS MANAGEMENT HANDBOOK

Exhibit 4

USDA - Forest Service

Trailbed & Slope FinishSlope Finish

Remove roots over \_\_\_\_\_ inches in diameter that protrude from the backslope.

Trailbed Finish

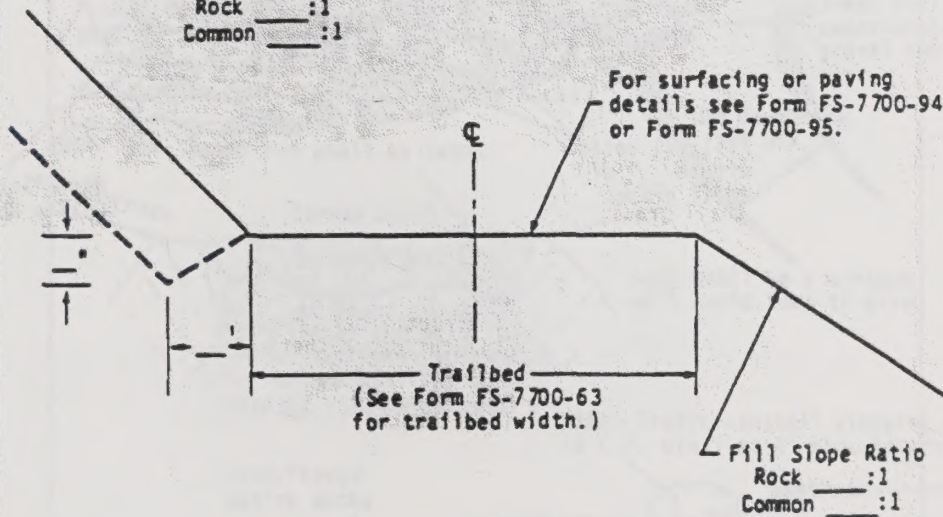
Remove loose rock and stone on the trailbed surface over \_\_\_\_\_ inches in the smallest dimension.

Remove embedded rock and stone that protrude more than \_\_\_\_\_ inches above the trailbed.

Remove roots which protrude more than \_\_\_\_\_ inches above the trailbed.

Backslope Ratio  
Rock \_\_\_\_\_:1  
Common \_\_\_\_\_:1

For surfacing or paving  
details see Form FS-7700-94  
or Form FS-7700-95.



Fillslope Ratio  
Rock \_\_\_\_\_:1  
Common \_\_\_\_\_:1

Trail Name \_\_\_\_\_  
Trail Number \_\_\_\_\_  
Segment \_\_\_\_\_ To \_\_\_\_\_

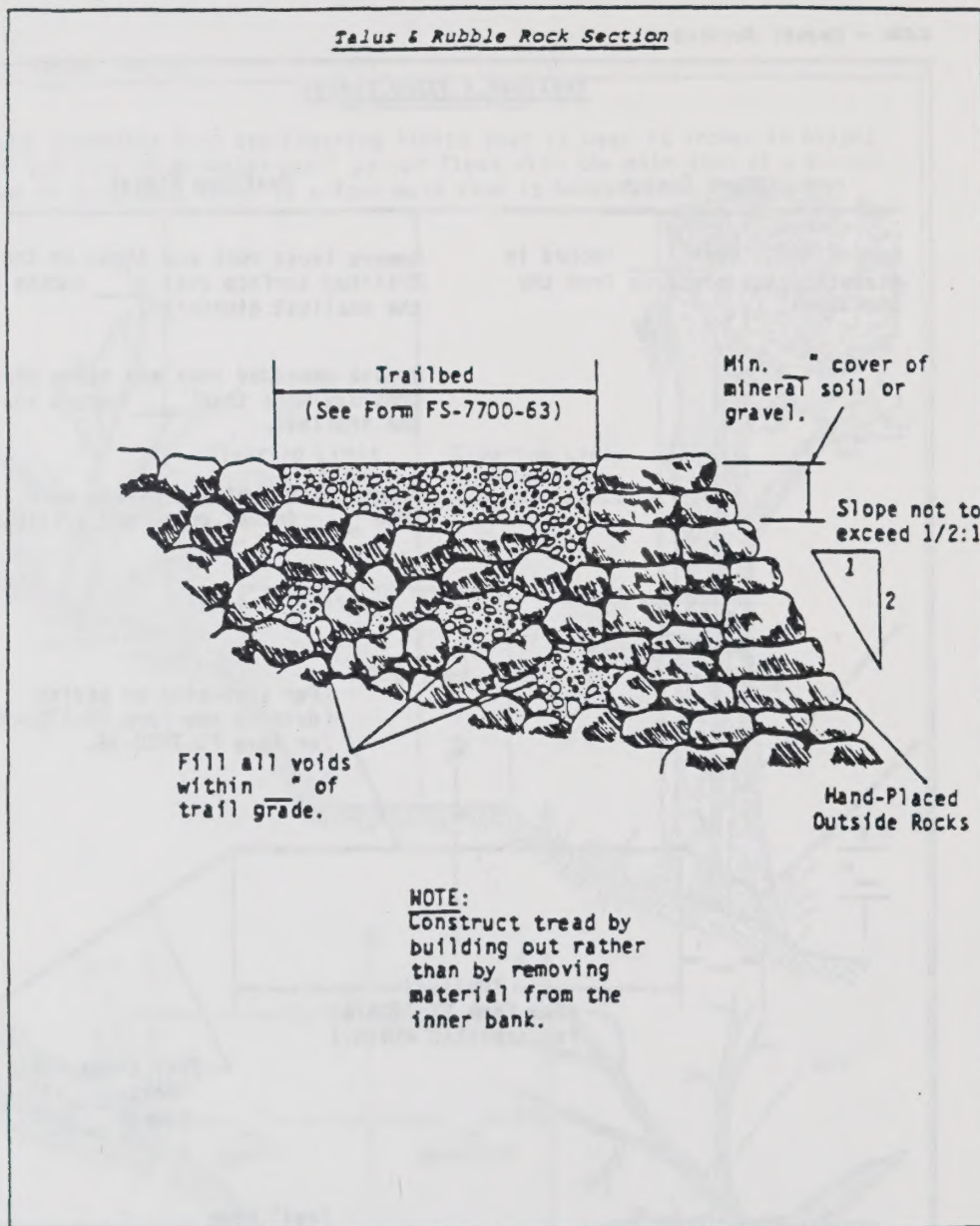
FS-7700-64 (6/84)



## TRAILS MANAGEMENT HANDBOOK

Exhibit 5

USDA - Forest Service



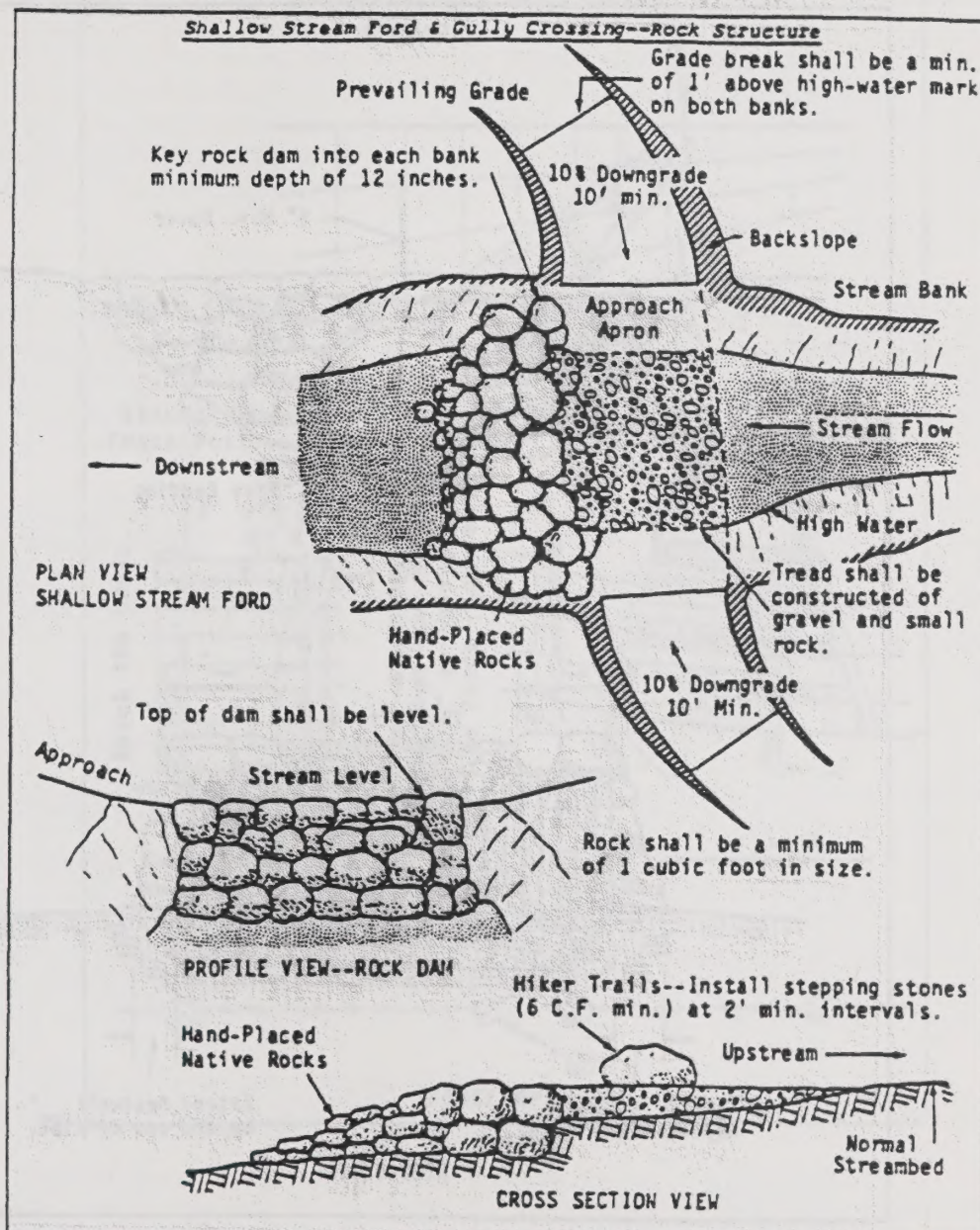
FS-7700-65 (6/84)



## TRAILS MANAGEMENT HANDBOOK

Exhibit 7

USDA - Forest Service



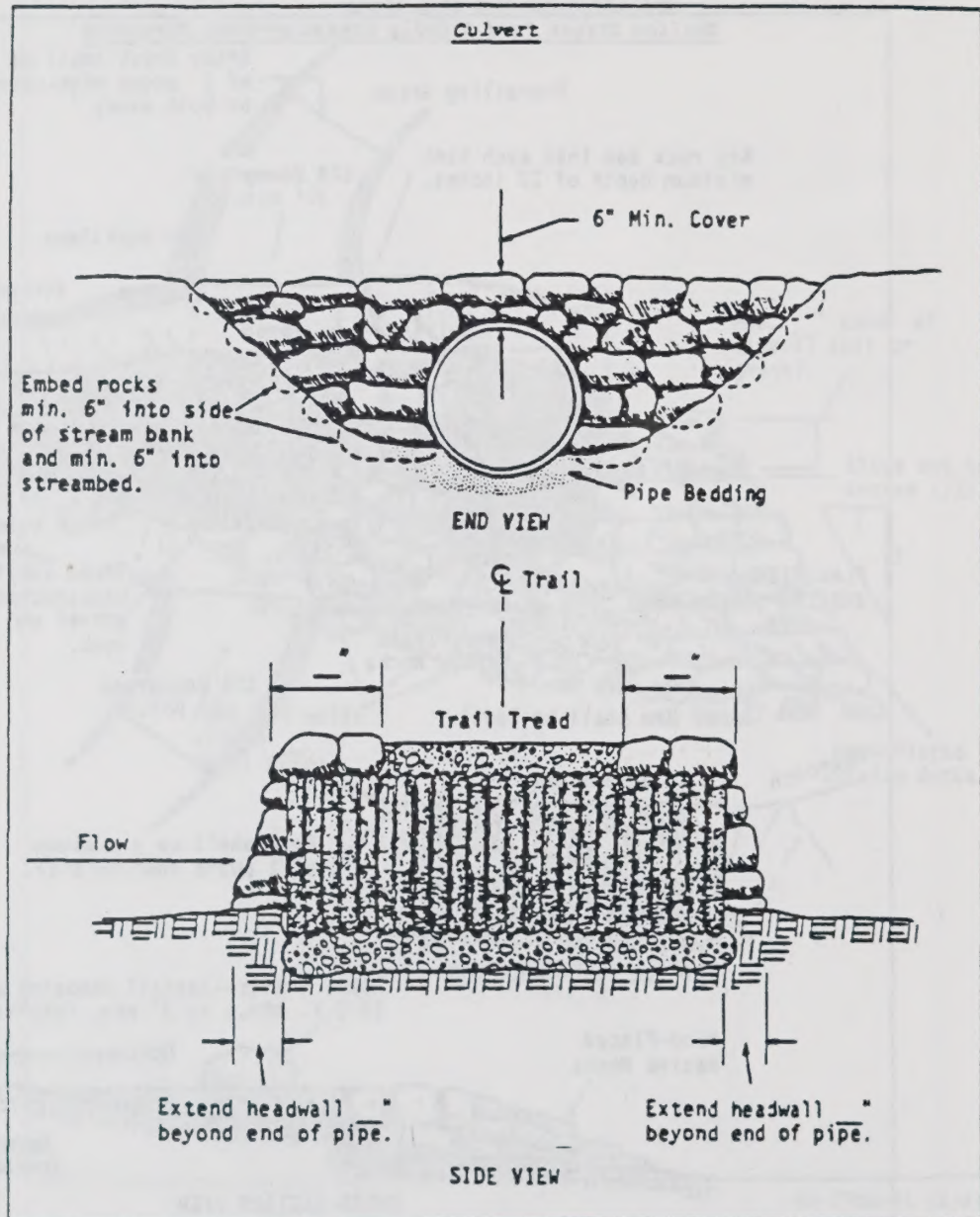
FS-7700-68 (6/84)



## TRAILS MANAGEMENT HANDBOOK

Exhibit 13

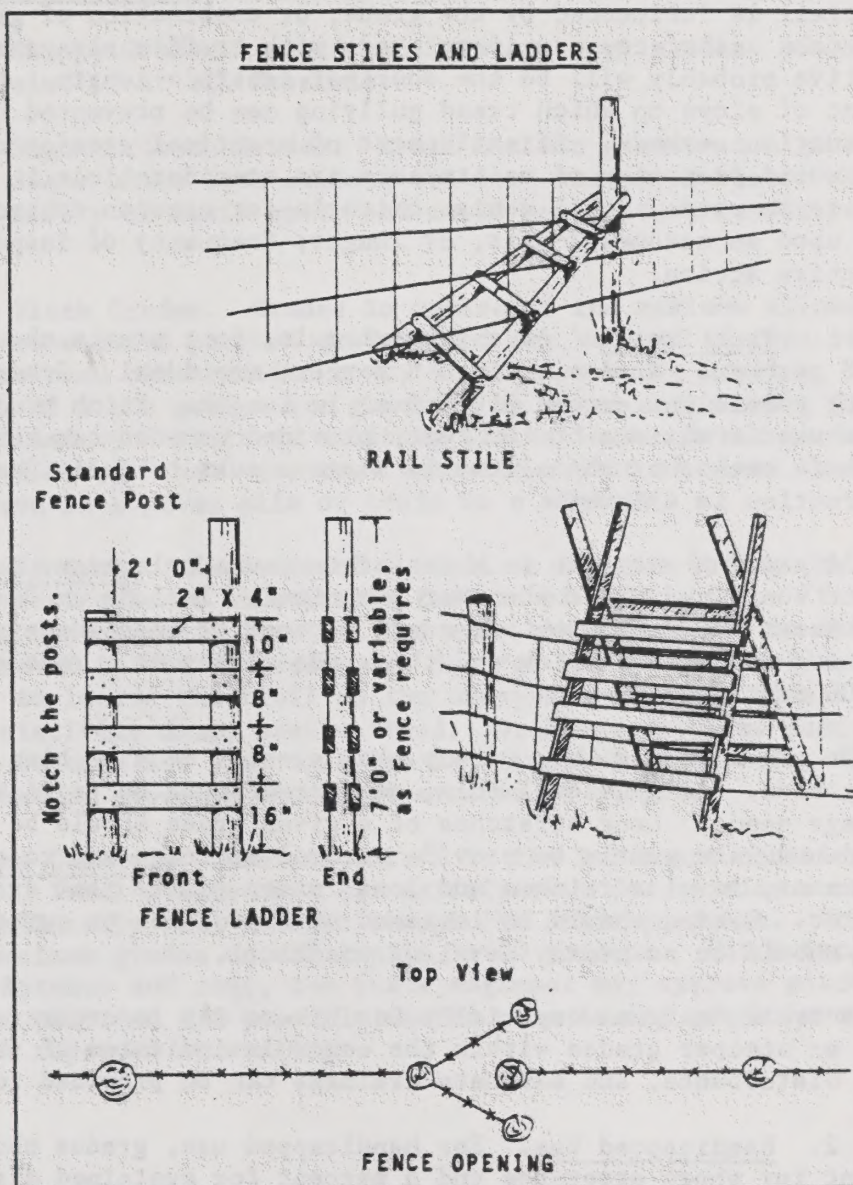
USDA - Forest Service



PS-7700-76 (6/84)



## TRAILS MANAGEMENT HANDBOOK

Exhibit 35



## H-9114-1 - TRAILS

C. Grade. Grade is the primary item in trail location and design. Length of a trail is influenced by the grade, or combination of grades. A trail built on a satisfactory uniform grade with traffic always moving toward the objective probably will be the shortest feasible length. Keep grades below percent of slope on which tread gullying can be prevented by feasible construction methods. Effectiveness of practical erosion control measures and the ensured frequency of maintenance are considerations in determining the grade to be used. Trail design criteria for erosion control and drainage are based upon an assumed 2-year, or longer, frequency of inspection and corrective action.

1. Foot Trails. As a general rule, foot trails should not be steeper than 8 percent. Grades of 1 to 8 percent are ideal. Grades from 8 to 10 percent should not exceed 1,000 feet in length. Pitch grades up to 15 percent may be used a maximum of 100 feet, provided erosion can be prevented. Any grades in excess of the allowable maximum must be fully justified before construction is allowed.

If gaining altitude is a factor in route selection, maintain a tight 8 percent sustained grade whenever practical. Include an "easing off" section of at least 500 feet with a grade 4 percent or less whenever practical. In beginning an ascent, "pick-up" the grade slowly at a rate of 1 percent or less per 100 feet.

No grade should be so steep that erosion is a problem. Do not locate zero grades. As a general rule, some grade must be provided to adjust to drainage needs. Long stretches of a given grade should be avoided. The grade should undulate gently to provide natural drainage and to eliminate monotonous, level stretches and long, steep grades that are tiring to the traveler. Grades should be lessened at approaches to switchbacks, and the turns should be as nearly level as practical.

A trail designed especially for hikers may incorporate short sections of steps or steeper grades within the controls indicated if these will not cause undue disturbance, and adequate drainage can be provided to prevent erosion.

2. Handicapped Use. For handicapped use, grades should not exceed 8 percent for short stretches and 5 percent for sustained distances.

3. Bikeways. For a bikeway, gradient should not exceed 10 percent. Although this may be difficult to achieve in the mountains, grades of greater than 5 percent over 300 feet long should be avoided, as should 2 percent grades of 1,500 feet. It is preferable that a 5 percent grade be no longer than 100 feet, and a 2 percent grade no longer than 500 feet.



## H-9114-1 - TRAILS

4. Grade Sections.

a. Choppy Grades. Avoid continuous choppy grades. Go around rather than over a point if at all feasible.

b. High Altitude Grades. Avoid maximum grades at high elevations (above 8,000 feet) where both animals and foot travelers become short winded. Consider the safety of trail users and avoid any feature conducive to accidents.

c. Pitch Grades. Grades in excess of the maximum allowable (10 percent) are considered pitched grades, and may be used if they will shorten the trail, decrease construction cost, or prevent undue erosion. The length and steepness of pitch grades are governed by sound engineering judgment and cannot be defined by formula or arbitrary limitations. Break grades at short intervals by flatter "rest" grades. Keep the number of times that pitch grades are used in a given mile or trail to a minimum.

D. Trail Exposure. Exposure of a trail to the sun during the heat of the day may be a desirable or undesirable feature of a location. If the trail is used early in the season before all the snow has melted, it is desirable. If such early travel is not necessary and dust on the trail is objectionable, it may be wiser to locate the trail on the unexposed or shady side of the ridge and have a relatively damp, stable tread. Drainage problems must be carefully considered. No hard and fast rule can be established governing what is desirable, whether exposure should be avoided or sought.

E. Erosion Control. Erosion control is the important consideration on steep grades. Trail grades that are satisfactory for erosion control and prevention ordinarily will be flat enough for other purposes. From the use viewpoint, maximum grades on all trails is 10 percent. For substantial savings in distance and cost, the State engineer may approve pitch grades up to 15 percent provided all possible routes of a lesser grade have been walked, analyzed, and reported in writing.



## H-9114-1 - TRAILS

IV. Design Standards. The following standards are applicable to most Bureau trails.

### A. Graded Sections.

1. Tread Widths. Make tread width not less than 18 inches nor more than 48 inches. This width on a sidehill section is the amount in cut measured inside the duff. It does not include any of the fill material, which by normal construction procedures will be deposited on top of the duff. The following are exceptions:

a. Special Situations. Along a precipice or hazardous area, the trail base should be at least 48-60 inches wide in order to provide safety to the bicyclist, hiker, and horseback rider. Local heavy traffic or use by wheel-chair handicapped may require a two-way trail to accommodate passing use. Special trail sections, such as fords through small streams or built-up sections across flat areas, should have a usable tread at least 36 inches wide. At switchback landings, graded trails should be designed to minimize the amount of excavation and cutback exposure.

b. Emergency. In some instances, trails serving high use areas may have to serve as access routes for emergency vehicles. Trails designated to serve as emergency access routes should be cleared of all obstruction and the cleared width and height should be sufficient to accommodate a standard emergency vehicle. The trail tread can then be constructed within this cleared area, leaving that portion of the cleared area not utilized by the trail tread in native grasses or short vegetation.

c. Bicyclist. The tread width required for a bicycle route is one of the primary considerations of design. The minimum dimensions include space required for the cyclist, allowance for lateral movement between cyclists and other users, allowance for lateral clearance of obstructions and stopping sight distance. The following minimum and desirable bikeway widths are recommended:

| Number of<br>lanes | Minimum width,<br>feet | Desirable width,<br>feet |
|--------------------|------------------------|--------------------------|
| 1                  | 3 1/2                  | 4                        |
| 2                  | 7                      | 8                        |
| 3                  | 10 1/2                 | 12 1/2                   |
| 4                  | 14                     | 17                       |



## H-9114-1 - TRAILS

On curves where the radius of curvature is less than 50 feet and the design speed is 10 mph or greater, pavement widening of up to 2 feet should be considered. Stopping sight distances for bicyclists should be as follows:

## BICYCLING STOPPING SIGHT DISTANCES, IN FEET, FOR DOWNHILL

| Design Speed<br>mph | Gradients of: |     |     |     |
|---------------------|---------------|-----|-----|-----|
|                     | 0%            | 5%  | 10% | 15% |
| 10                  | 50            | 50  | 60  | 70  |
| 15                  | 85            | 90  | 100 | 130 |
| 20                  | 130           | 140 | 160 | 200 |
| 25                  | 175           | 200 | 230 | 300 |
| 30                  | 230           | 260 | 310 | 400 |







# FILE COPY

FRESNO REPORT TO THE CITY COUNCIL

|                     |                    |
|---------------------|--------------------|
| AGENDA ITEM NO.     | 5:00 pm - 5        |
| COUNCIL MEETING     | 11/27/90           |
| APPROVED BY         |                    |
| DEPARTMENT DIRECTOR | Al Solis           |
| CITY MANAGER        | Michael A. Bierman |

November 15, 1990

FROM: ALVIN P. SOLIS, Director  
Development Department

BY: NICK YOVINO, Development Manager *Nick Yovino*  
Planning and Development Services

SUBJECT: MULTI-PURPOSE TRAILS PLAN/AMENDMENT TO THE OPEN  
SPACE AND RECREATION ELEMENT OF THE CITY OF FRESNO  
GENERAL PLAN AND AMENDMENTS TO THE CENTRAL AREA,  
BULLARD, EDISON, FRESNO HIGH-ROEDING, HOOVER,  
MCLANE, ROOSEVELT AND WOODWARD PARK COMMUNITY  
PLANS.

## BACKGROUND

On July 31, 1990, the Fresno City Council initiated the proposed Multi-Purpose Trails Plan Amendment. The Trails Plan concentrates on Metropolitan Area recreation trails for cyclists, joggers, hikers and equestrians.

In developing the Trails Plan, a Trails Manual (attached) was prepared. The Manual was per Council direction, prepared as a cooperative effort between City of Fresno Planning Staff and Land Use Associates, a planning consulting firm hired by the Fresno County Council of Governments.

The Manual covers potential trail corridors for equestrians, hikers, walkers, cyclists, runners and the physically disabled, and evaluates existing and potential trails from planning to the development phase. The Manual also identifies goals/policies, trail design, access, construction standards, and financing cost options.

Although the Manual addresses existing and potential trail corridors, it does not establish specific plan lines for future trail alignments. The Manual is intended to be used as a resource guide in developing potential multi-purpose trail corridors within the Fresno-Clovis Metropolitan Area. Specific plan lines for future trail alignments, requiring engineering studies, will necessitate a more detailed planning effort.



The proposed Amendment incorporates the goals, policies and trail location recommendations of the Manual. It also includes alternate methods to finance construction of the complete trail system. The cost of the system is estimated at approximately \$13,000,000 (excluding a trail system in the San Joaquin Riverbottom). However, it is general practice to require adjacent developers to construct trail systems along major roadways. Minus major street corridor costs (\$4,812,500), total costs would be approximately \$8,140,000. Further, if improvements along canal banks are limited to signage and special intersection signalization, costs would be reduced by an estimated \$4,635,000, bringing the total cost to about \$3,505,000.

Aside from requiring the trails as part of new construction, several finance sources are identified and defined. Implementation of the trail system would be long term and depend on the availability of funds.

It should also be noted that the amendment does not depict a specific trail alignment in the San Joaquin Riverbottom, but does recommend a trail system in the Riverbottom corridor. This is because the overall Riverbottom trail location can be more precisely defined through the State's Parkway Specific Plan which was recently authorized by the State Legislature and Governor. The preliminary trail system proposed by the San Joaquin River Parkway and Conservation Trust is referenced in the amendment.

Further, any future trail corridor development along a major street such as Herndon Avenue, will be subject to right-of-way availability. Therefore, an existing development may preclude a continuous trail. In any case, maintaining a safe trail with minimal traffic hazard potential, would be a priority.

In developing the Manual and General Plan amendment, staff coordinated input with the Fresno Metropolitan Flood Control District, the Fresno Irrigation District, the Friant Water Users Authority, Fresno County, and the City of Clovis. The San Joaquin River Trail Council, Horse Owners for Trails, Fresno Cycling Club, and the San Joaquin River Parkway and Conservation Trust were represented through a ten-member advisory committee appointed by the Fresno City Council.

The Trails Committee met regularly, provided input, and approved the Manual and the proposed General Plan amendment. The Committee recommends that the Manual and Amendment be approved by the City Council.



## PLANNING COMMISSION ACTION

On November 14, 1990, The Planning Commission held a public hearing to consider Plan Amendment No. A-90-37, and after consideration of environmental documents, testimony and information presented determined that the adoption of the proposed amendment is in the best interest of the City of Fresno.

Environmental Finding: The Environmental Assessment for this plan amendment identifies no substantial evidence in the record that the project may have a significant effect on the environment. Staff, therefore, recommends the adoption of The Negative Declaration for this project.

## THE ISSUE

The issue is whether to approve the Master Trails Plan as an amendment to the City's General Plan and adopted Community Plans.

## CONCLUSIONS AND RECOMMENDATIONS

Being that staff prepared Initial Study No. 90-71, which resulted in the filing of a Negative Declaration with no appeals, it is recommended that the City Council approve Negative Declaration No. 90-71 and the proposed Multi-Purpose Trails Plan Amendment to the Open Space and Recreation Element of the General Plan and related amendments to the Central Area, Bullard, Edison, Fresno High-Roeding, Hoover, McLane, Roosevelt and Woodward Park Community Plans.

## FISCAL IMPACT OF RECOMMENDATION

Specific funding for the proposed trail system has not been identified at this time. The alternative financial mechanisms listed in the Amendment would be pursued over an extended period and the trail system would be incrementally constructed as funds become available.

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PLN377:+259

Attachments: Negative Declaration & Initial Study No, 90-71  
Trails Manual  
Multi-Purpose Trails Plan Amendment  
Planning Commission Resolution  
Resolution



RESOLUTION NO. 90-493

A RESOLUTION OF THE COUNCIL OF THE CITY OF FRESNO, CALIFORNIA, AMENDING THE OPEN SPACE AND RECREATION ELEMENT OF THE 1984 FRESNO GENERAL PLAN AND AMENDING THE CENTRAL AREA, BULLARD, EDISON, FRESNO HIGH-ROEDING, HOOVER, MCLANE, ROOSEVELT, AND WOODWARD PARK COMMUNITY PLANS (PLAN AMENDMENT NO. 90-37).

WHEREAS, the Fresno City Council on November 20, 1984, adopted the General Plan, including the Open Space and Recreation Element; and

WHEREAS, the implementation program for the 1984 Fresno General Plan included the Systematic update of each of the City's Community Plans; and

WHEREAS, on July 31, 1990, the Council initiated the proposed Fresno Master Multi-Purpose Trails Plan Amendment to the Open Space and Recreation Element of the 1984 Fresno General Plan and Related Amendments to the adopted Community Plans; and

WHEREAS, the ten member Fresno Master Trails Committee, staff and consultant held six public meetings between January 1990, and September 1990, in order to formulate, review, discuss, take public input and resulted in their recommended approval of the proposed Plan Amendment; and

WHEREAS, The Environmental Assessment No. 90-71 conducted for the proposed plan amendment resulted in the filing of a Negative Declaration; and

PACSED \_\_\_\_\_  
EFFECTIVE 11/27/90

MICROFILMED

332-6-12-91

90-493



WHEREAS, on November 14, 1990, the Planning Commission held a public hearing to consider Plan Amendment No. A-90-37, and after consideration of environmental documents, testimony and information presented, determined that the adoption of the proposed amendment is in the best interest of the City of Fresno, and

WHEREAS, on November 27, 1990, the Council held a public hearing to consider Plan Amendment No. A-90-37 and, based upon the testimony and information presented at the hearing and upon review and consideration of the environmental documentation provided, found and determined that there are reasons which justify the adoption of the proposed amendment.

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Fresno as follows:

1. The Council finds that there is no substantial evidence in the record that Plan Amendment No. A-90-37 may have a significant effect on the environment and hereby adopts the Negative Declaration prepared for this project.



2. The Council of the City of Fresno hereby adopts Plan Amendment No. A-90-37, amending the Open Space and Recreation Element of the 1984 Fresno General Plan and amending the Central Area, Bullard, Edison, Fresno High-Roeding, Hoover, McLane, Roosevelt, and Woodward Park Community Plans, as depicted on Exhibit "A", attached hereto and incorporated herein by reference.

CLERK'S CERTIFICATE

STATE OF CALIFORNIA)  
COUNTY OF FRESNO ) ss.  
CITY OF FRESNO )

I, JACQUELINE L. RYLE, City Clerk of the City of Fresno, certify that the foregoing resolution was adopted by the Council of the City of Fresno, California, at a regular meeting held on the 27th day of November, 1990.

APPROVED AS TO FORM

JACQUELINE L. RYLE  
City Clerk

CITY ATTORNEY'S OFFICE

By

Debra M. Hight  
Deputy

By

Jacqueline L. Ryle  
Deputy

ZG:flh  
PLN377/+260



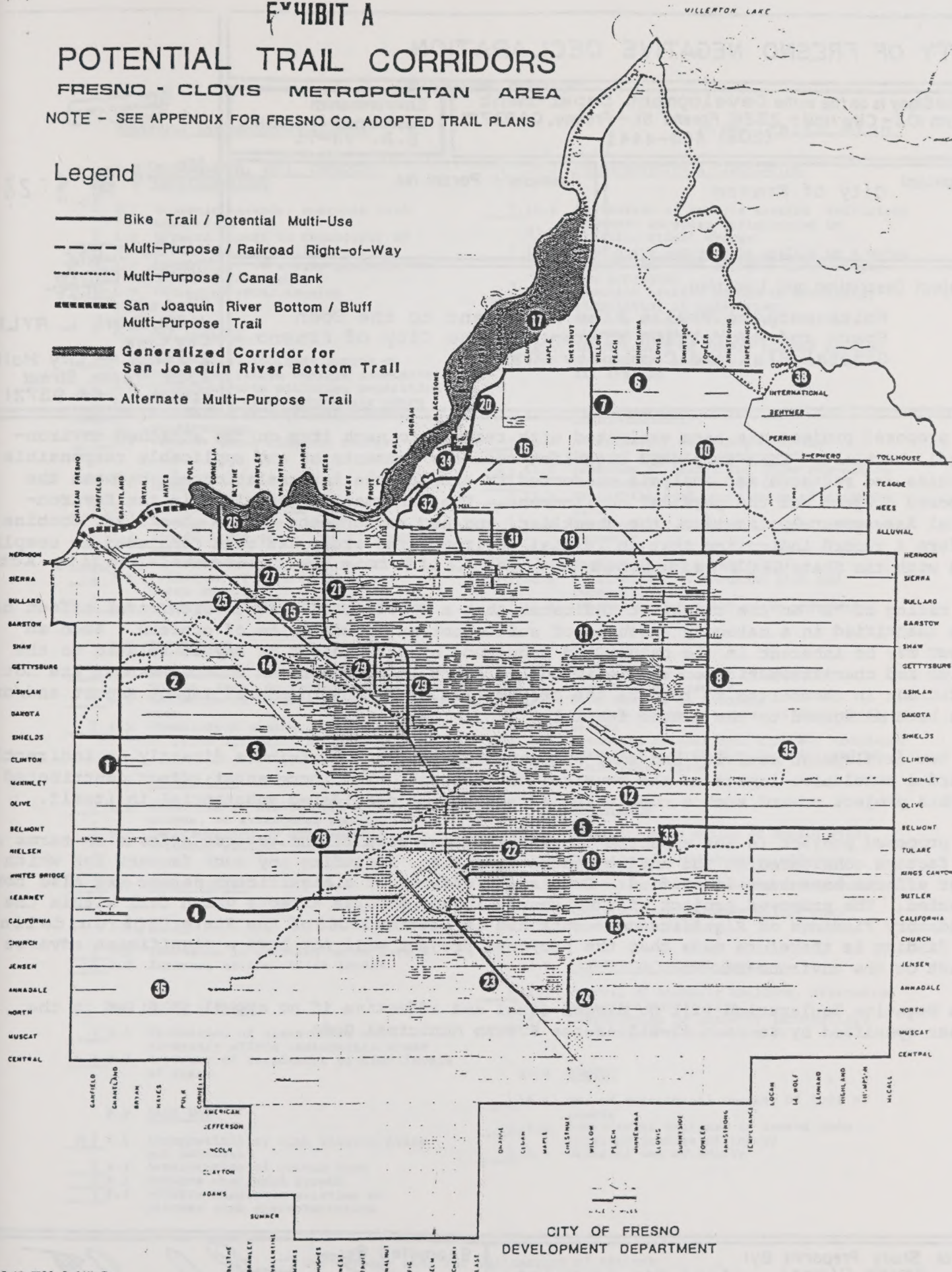
# POTENTIAL TRAIL CORRIDORS

FRESNO - CLOVIS METROPOLITAN AREA

NOTE - SEE APPENDIX FOR FRESNO CO. ADOPTED TRAIL PLANS

## Legend

- Bike Trail / Potential Multi-Use
- - - - Multi-Purpose / Railroad Right-of-Way
- ~~~~~ Multi-Purpose / Canal Bank
- ===== San Joaquin River Bottom / Bluff Multi-Purpose Trail
- Generalized Corridor for San Joaquin River Bottom Trail
- Alternate Multi-Purpose Trail



CITY OF FRESNO  
DEVELOPMENT DEPARTMENT



# CITY OF FRESNO NEGATIVE DECLARATION

Initial Study is on file in the Development Department  
Room 103 - City Hall - 2326 Fresno St. - Fresno, CA 93721  
(209) 488-4441

Environmental  
Assessment Number  
E.A. 90-71

Applicant City of Fresno

Assessor's Parcel No.

N/A

## Project Description and Location

Multi-purpose Trails Plan Amendment to the Open  
Space and Recreation Element of the City of Fresno  
General Plan and Community Plans

SEP 28 PM 4:27

CITY CLERK  
FRESNO, CALIF.  
Filed with:  
JACQUELINE L RYLE  
City Clerk  
2nd Floor - City Hall  
2326 Fresno Street  
Fresno, CA 93721

The proposed project has been evaluated with respect to each item on the attached environmental checklist. This completed checklist reflects comments of any applicable responsible agencies and research and analysis conducted to examine the interrelationship between the proposed project and the physical environment. The information contained in the Environmental Assessment Application, the checklist, and any attachments to the checklist, combine to form a record indicating that an initial environmental study has been completed in compliance with the State CEQA Guidelines and the California Environmental Quality Act.

A rating of "2" on the checklist indicates that a specific adverse environmental effect has been identified in a category which is of sufficient magnitude to be of concern. Such an effect may be inherent in the nature and magnitude of the project or may be related to the design and characteristics of the individual project. Effects rated in this manner are not sufficient in themselves to require the preparation of an Environmental Impact Report and/or have been mitigated to the extent feasible.

A new development activity and many non-physical projects contribute directly or indirectly toward a cumulative impact on the physical environment. The incremental effect contributed by this project toward such a cumulative effect is not considered substantial in itself.

The proposed project is not expected to result in any significant adverse effects in terms of the factors considered on the environmental checklist, including any such factors for which no effects have been identified. Cumulative effects of a significant nature are also not expected. The proposed project will not result in any adverse effects which fall within the "Mandatory Findings of Significance" contained in Section 15065 of the State CEQA Guidelines. The finding is therefore made that the proposed project will not have a significant adverse effect on the environment.

This Negative Declaration will be deemed final and effective if no appeal is filed in the manner specified by Section 12-513 of the Fresno Municipal Code.

Initial Study Prepared By:  
Bruce O'Neal Land Use Associates

Submitted By:

Date: September 28, 1990

Planner III



# ENVIRONMENTAL CHECKLIST

## Potential Environmental Effects

EA No. Trails Plan

|                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.0 <u>TOPOGRAPHIC, SOIL, GEOLOGIC CONSIDERATIONS</u>                                                                                                                                                                                                           | 10.0 <u>TRANSPORTATION &amp; CIRCULATION</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| *1 1.1 Geologic hazards, unstable soil conditions<br>1 1.2 Adverse change in topography or ground surface relief<br>1 1.3 Destruction of unique geologic or physical features<br>1 1.4 Increased water erosion                                                  | 1 10.1 Generation of vehicle traffic sufficient to cause capacity deficiencies on existing street system<br>1 10.2 Cumulative increase in traffic on a major street for which capacity deficiencies are projected<br>2 10.3 Specific traffic hazard to motorists, bicyclists, or pedestrians<br>1 10.4 Routing of non-residential traffic through residential area<br>1 10.5 Insufficient or poorly located parking<br>1 10.6 Substantial increase in rail and/or air traffic               |
| 2.0 <u>AIR QUALITY</u>                                                                                                                                                                                                                                          | 11.0 <u>URBAN SERVICES</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 1 2.1 Substantial indirect source of pollution (large vehicle generator)<br>1 2.2 Direct on-site pollution generation<br>1 2.3 Generation of objectionable odors<br>1 2.4 Generation of dust except during construction<br>1 2.5 Adverse local climatic changes | 1 11.1 Availability of fire protection<br>*1 11.2 Lack of emergency vehicle access<br>*1 11.3 Adequacy of design for crime prevention<br>1 11.4 Overcrowding of school facilities<br>1 11.5 Availability of water mains of adequate size<br>1 11.6 Availability of sewer lines of adequate capacity<br>1 11.7 Availability of storm water drainage facilities (on or off site)<br>1 11.8 Availability of adequate park and recreation areas<br>1 11.9 Unusually high solid waste generation |
| 3.0 <u>WATER</u>                                                                                                                                                                                                                                                | 12.0 <u>HAZARDS</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 1 3.1 Insufficient ground water available for long-term project use<br>1 3.2 Use of large quantities of ground water<br>1 3.3 Wasteful use of ground water<br>1 3.4 Pollution of surface or ground water supplies<br>1 3.5 Reduction in ground water recharge   | 1 12.1 Risk of explosion or release of hazardous substances<br>*1 12.2 Site subject to flooding<br>1 12.3 Adverse change in course of flow of flood waters<br>1 12.4 Potential hazards from aircraft accidents<br>1 12.5 Potential hazards from landfill and/or toxic waste sites                                                                                                                                                                                                           |
| 4.0 <u>PLANT LIFE</u>                                                                                                                                                                                                                                           | 13.0 <u>AESTHETICS</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2 4.1 Reduction of the numbers of any unique, rare, or endangered species<br>1 4.2 Reduction in acreage of agricultural crop<br>1 4.3 Premature or unnecessary conversion of prime agricultural land                                                            | 1 13.1 Obstruction to public or scenic vista or view<br>1 13.2 Creation of aesthetically offensive conditions<br>*1 13.3 Removal of street trees or other valuable vegetation<br>1 13.4 Architectural incompatibility with surrounding area                                                                                                                                                                                                                                                 |
| 5.0 <u>ANIMAL LIFE</u>                                                                                                                                                                                                                                          | 14.0 <u>HISTORICAL/ARCHEOLOGICAL</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 2 5.1 Reduction in the numbers of any rare unique, or endangered species<br>1 5.2 Deterioration or displacement of valuable wildlife habitat                                                                                                                    | 1 14.1 Removal of historic building, disruption of archeological site<br>1 14.2 Construction or activity incompatible with adjacent historic site                                                                                                                                                                                                                                                                                                                                           |
| 6.0 <u>HUMAN HEALTH</u>                                                                                                                                                                                                                                         | 15.0 <u>ENERGY</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 7.0 <u>NOISE</u>                                                                                                                                                                                                                                                | 1 15.1 Use of substantial amounts of fuel or energy<br>1 15.2 Substantial increase in demand upon existing sources of energy<br>1 15.3 Wasteful use of energy                                                                                                                                                                                                                                                                                                                               |
| 1 7.1 Increases in existing noise levels<br>1 7.2 Exposure to high noise levels                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 8.0 <u>LIGHT &amp; GLARE</u>                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 1 8.1 Production of glare which will adversely affect residential areas<br>1 8.2 Exposure of residences to high levels of glare                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 9.0 <u>LAND USE</u>                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| *1 9.1 Incompatibility with adopted plans and policies<br>1 9.2 Acceleration of growth rate<br>1 9.3 Induces unplanned growth<br>1 9.4 Adverse change in existing or planned area characteristics                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |



INITIAL STUDY  
ENVIRONMENTAL ASSESSMENT  
CITY OF FRESNO MULTI-PURPOSE TRAILS PLAN AMENDMENT

Project Description: The proposed project is the Multi-Purpose Trails Plan Amendment to the Open Space and Recreation Element of the City of Fresno General Plan. The plan would also amend the Central Area, Bullard, Edison, Fresno High-Roeding, Hoover, McLane, Roosevelt, and Woodward Park Community Plans. The Trails Plan Amendment covers existing and potential trail corridors for equestrians, walkers, cyclists, runners and the physically disabled.

Analysis: On July 24, 1990, the Fresno City Council initiated the Multi-Purpose Trails Plan Amendment. As part of the process to develop the Trails Plan Amendment, a Trails Manual was prepared per Council direction. The Manual was prepared in a cooperative effort between City of Fresno Planning Staff, the Council of Fresno County Governments, and a consultant. The Manual is intended to be used as a resource guide in developing multi-purpose trail corridors within the Fresno-Clovis Metropolitan Area. Specific plan lines for future trail alignments, requiring engineering studies, will necessitate future detailed planning efforts and environmental analysis.

The Manual served as the basis for the Trails Plan Amendment. The amendment incorporates the goals, policies and trail location recommendations of the Manual and includes alternate methods to finance construction of the trail system. Implementation of the trail system would be long-term and depend on the availability of funds that could be generated through financing alternatives.

The multi-purpose trail would generally be developed within a 25 foot right-of-way and would consist of:

- an 8 foot wide natural surface equestrian and hiking trail
- a 12 foot wide surfaced cyclists and physically handicapped trail
- 5 feet of unobstructed buffer setback, being 2 1/2 feet on the outer side of each trail

In some locations, it may not be physically or economically possible to develop the full multi-purpose trail design. The full right-of-way should be attained, however, for future use.



Figure 1

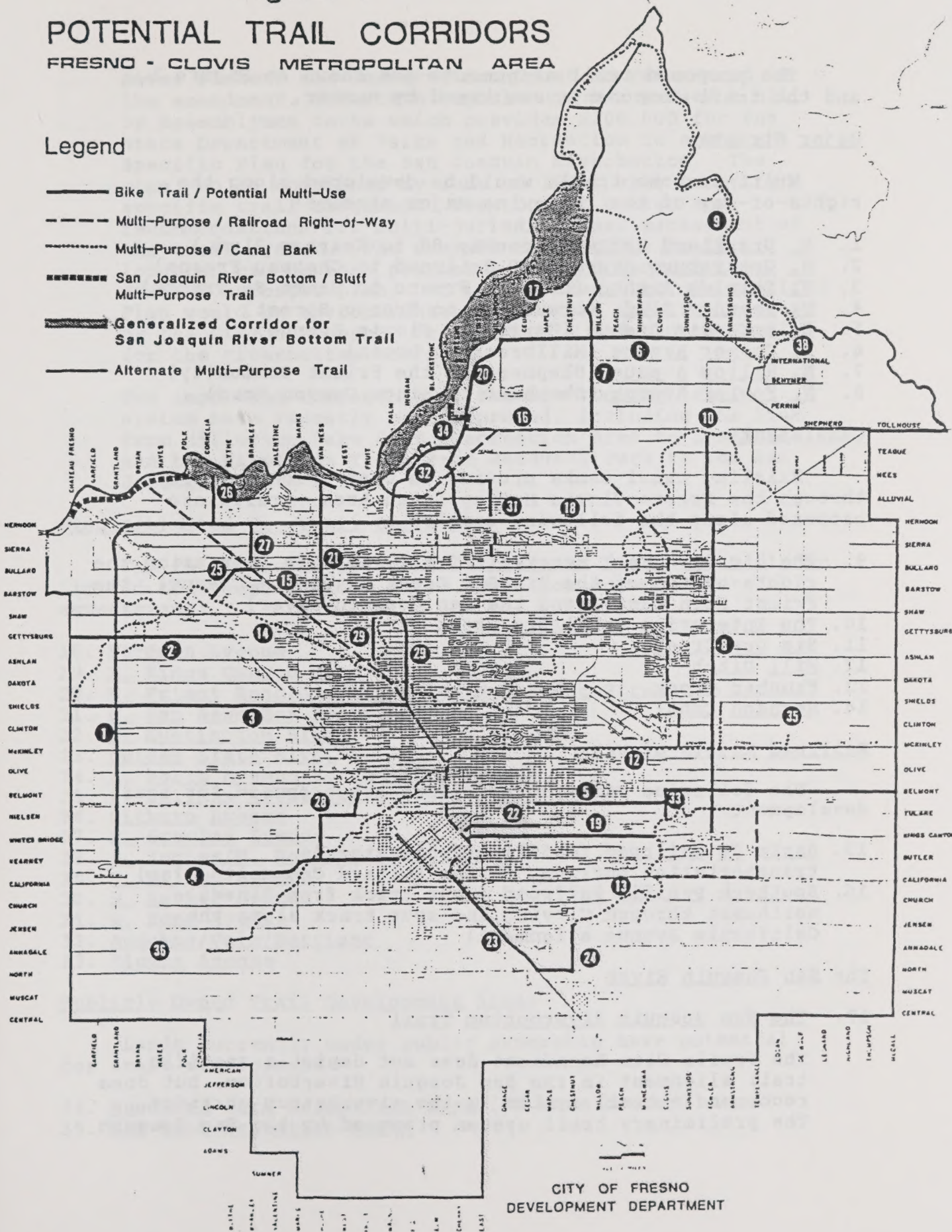
MILEAGE SCALE

# POTENTIAL TRAIL CORRIDORS

## FRESNO - CLOVIS METROPOLITAN AREA

### Legend

-  Bike Trail / Potential Multi-Use
-  Multi-Purpose / Railroad Right-of-Way
-  Multi-Purpose / Canal Bank
-  San Joaquin River Bottom / Bluff Multi-Purpose Trail
-  Generalized Corridor for San Joaquin River Bottom Trail
-  Alternate Multi-Purpose Trail





The proposed trail alignments are shown on Figure 1. and the trail components are keyed by number.

### Major Streets

Multi-purpose trails would be developed along the rights-of-way of the following major streets:

1. N. Grantland Avenue (Freeway 99 to Kearney Blvd.)
2. W. Gettysburg Avenue (SP Railroad to Chateau Fresno)
3. W. Shields Avenue (Chateau Fresno to Santa Fe Tracks)
4. W. Kearney Blvd. (Grantland to Fresno Street)
5. E. McKenzie Avenue (Barton to Clovis Avenue)
6. E. Copper Avenue (Millbrook to Locan)
7. N. Willow Avenue (Shepherd to the Friant Community)
8. N. Fowler Avenue (Shepherd to Kings Canyon Road)

### Canal Banks

Existing canal banks provide an open space network through the Fresno-Clovis Metropolitan Area; trails are proposed along the following canals:

9. The Big Dry Creek Reservoir Trail (10 mile loop using the rights-of-way of the Big Dry Creek Diversion Channel, the Friant Kern Canal, and the San Joaquin River)
10. The Enterprise Canal/Dry Creek
11. Big Dry Creek
12. Mill Ditch
13. Fancher Creek
14. Herndon Canal

### Railroad Rights-of-way

The following railroad corridors are proposed for trail development:

15. Santa Fe Railroad (mainline designated as a transportation corridor in the Bullard Community Plan)
16. Southern Pacific Railroad (spur track from Pinedale northeast through Clovis; and spur track along the California Avenue alignment)

### The San Joaquin River

17. The San Joaquin Riverbottom Trail

The Trails Plan Amendment does not depict a specific trail alignment in the San Joaquin Riverbottom, but does recommend a trail system in the riverbottom corridor. The preliminary trail system proposed by the San Joaquin



River Parkway and Conservation Trust is referenced in the amendment. The State Legislature has passed a bill by Assemblyman Costa which provides \$200,000 for the State Department of Parks and Recreation to prepare a Specific Plan for the San Joaquin Riverbottom. The plan, to be completed by June of 1991, will identify a specific trail alignment, development costs, and recommendations for multi-jurisdictional management of the trail system. The overall riverbottom trail location can be more precisely defined through the State's specific plan. It is intended that the Specific Plan would be environmentally assessed and then adopted by the City of Fresno, Fresno County and Madera County for the riverbottom corridor.

Two important components of the riverbottom trail system have recently been approved, including the link from Millerton Lake State Recreation Area to Lost Lake, and the Riverside Trail from Woodward Park to the San Joaquin River.

#### Single/Limited Use Trail Corridors

The following major and local streets have potential for limited trail development which would not accommodate equestrians:

18. Herndon Avenue
19. E. Kings Canyon Road
20. N. Friant Road/Audubon Drive/N. Fresno Street
21. N. Van Ness/Boy Scout Road
22. E. Huntington Blvd.
23. Golden State Blvd.
24. E. North Avenue/N. Chestnut Avenue
25. N. Salinas Avenue/W. Bullard Avenue
26. Milburn Avenue
27. N. Brawley Avenue
28. S. Hughes/W. Neilsen/Pacifica
29. N. Wilson Avenue
30. N. Authur Avenue
31. N. Bond Avenue
32. Audubon/Palm/Harrison
33. Clovis Avenue

#### Publicly Owned Trail Development Areas

Lands currently under public ownership have potential for trail development:

34. Woodward Park Equestrian Area (60 acre center)
35. Red Bank Detention Basin



- 36. Fresno Wastewater Treatment Facility
- 37. FMFCD Basins
- 38. Big Dry Creek Reservoir

1.1 Geologic hazards, unstable soil conditions. This concern relates to potential trail construction in the San Joaquin Riverbottom as well as to trail development along canal banks. Potential unstable soil conditions within the riverbottom will be addressed in the specific plan to be prepared by the State and in subsequent environmental documentation.

Several trail corridors are proposed to be developed along existing canal banks. These banks are generally quite stable and are maintained by various agencies such as the Friant Water Users Authority for the Friant-Kern Canal and the Fresno Irrigation District for other canals in the proposed system. These canal banks are constructed to withstand the weight of maintenance vehicles and limited trail use activities should have no significant effect on stability. While the canal banks are sufficiently compacted for trail use, they are not suitable for structures or for intensive use by off-highway vehicles.

#### Mitigation

1. Each project must consider the nature of potential soil impacts and erosion, the need for erosion control at the particular location, the appropriate method of effectively controlling erosion and the aesthetics of the final project.

4.1 Reduction of the number of any unique, rare, or endangered plant species, and 5.1 Reduction in the numbers of any rare, unique, or endangered animal species. The San Joaquin Riverbottom and environs potentially contains several unique or threatened plant and animal species and important natural communities. Plants include the San Joaquin Valley Orcuttia Grass, Fleshey Owls Clover, and Harwegs Pseudobahis; animals include the San Joaquin Pocket Mouse, the Valley Elderberry Longhorn Beetle, the California Yellow-billed Cuckoo and the Bald Eagle. Habitat areas could be adversely impacted by trail construction or later human disturbance adjacent to the trail. Following the State Specific Plan process, detailed biological studies can be undertaken in known trail corridor areas.

Outside of the riverbottom area, there are no known areas of important plant and animal habitat which would be disturbed by trail development. The Big Dry Creek Reservoir Trail would pass through a low-lying foothill area along the Big Dry Creek diversion channel which has limited potential



for vernal pool formation and associated plants. The trail would follow existing easements in previously disturbed areas, however, and is not expected to disturb plant and animal habitat.

#### Mitigation

1. All potential trail corridors should be inventoried for existence of biotic resources, including mature trees, and design measures taken to preserve the resources where possible.

6.0 Human Health. The primary human health issue is one of safety in using trail corridors along canal banks.

The Friant-Kern Canal is part of the Big Dry Creek Reservoir Trail and is owned by the US Bureau of Reclamation. The Friant Water Users Authority (FWUA) is the responsible agency for operation and maintenance of the canal. The Friant-Kern Canal is fenced throughout most of its length and access is controlled for safety and liability reasons. The Big Dry Creek Reservoir Trail was proposed by the City Parks, Recreation and Community Services Department and the Fresno Metropolitan Flood Control District as a permanent equestrian trail to replace the interim equestrian trails in Woodward Park.

Both the Bureau of Reclamation and the FWUA have voiced strong opposition to using the banks of the Friant-Kern Canal for public access trail use, even though the canal has long been included as a trail corridor in the Fresno County Recreation Trails Plan.

The FWUA states the following safety concerns:

1. The remote location, cold water and steep side slopes along with unsupervised use creates a potentially dangerous environment for drownings, especially for children.
2. The canal embankments are subject to continuous use by large maintenance equipment which require the full width of the road and embankment.
3. The public would be exposed to the canal's control and turnout structures, at which high voltage fixtures and potentially dangerous high velocity flow conditions exist.
4. The public would be exposed to maintenance activities such as herbicide and pesticide application.



The FWUA also points out the difficulty in securing liability insurance and that the cost of such insurance for allowing recreational use would be prohibitive.

The Fresno Irrigation District (FID) operates the balance of the canal system proposed for canal bank trail development. The FID system is not fenced for complete access control and is generally open for public use. The banks of the canals, particularly portions of the Mill Ditch, Fancher Creek and Herndon Canal, are now moderately used by walkers, joggers, cyclists and equestrians. FID officials, however, are concerned about any "formalization" of the canal banks in an urban trail system for the same safety and liability concerns discussed by the FWUA.

The City of Fresno has no jurisdictional authority over the US Bureau of Reclamation, the Friant Water Users Authority or the Fresno Irrigation District and would depend upon joint powers agreements for any future trail use. The City is empowered by the State, however, to plan for future land use and recreation needs within a logical planning territory that has historically included the Fresno-Clovis Metropolitan Area. In order to implement the canal bank portion of the trails amendment, the City must work closely with the various agencies over time to resolve design problems and issues of safety and liability. Although resolution of these issues may not appear feasible today, changing legislation and other opportunities may make canal bank use possible in the future.

There is ample precedent for joint use of facilities by trail users in other communities. In Southern California, flood channels, canal banks and railroad rights-of-way are used for urban trails in arrangements whereby the City, County or recreation district provides liability insurance under an umbrella policy and holds the property owner harmless in the event of an injury or other claim. A specific example in Northern California is the agreement between the US Bureau of Reclamation, the Contra Costa County Water District and the East Bay Regional Park District to allow trail development along an 11.4 mile stretch of the Contra Costa Canal. In this instance, both the Bureau and the water district recognize that the public interest is best served by the development of a recreational trail within the canal right-of-way, although the agreement makes it clear that such recreational development is secondary to the transporting of water. The parks district is responsible for the construction, operation and maintenance of the trail system. The parks district also provides liability insurance and holds the Bureau and the water district harmless from any and all liability for injuries, death or property damage.



An additional concern for safety and liability is the proposal to use the Big Dry Creek Diversion Channel as part of the Big Dry Creek Reservoir Trail. The diversion channel was developed to channel flood waters from heavy rains in the foothills from Big Dry Creek to the San Joaquin River. The diversion channel is an unfenced easement across multiple private lands and is used for open grazing. Land owners in the area have expressed strong opposition to the trail along the channel and have pointed to potential trespass problems, vandalism, and impacts on agriculture. The easement is expressly for flood control purposes and public access trail use would not be permitted unless the conditions of the easement were changed or the easement area was purchased.

The City of Fresno does not control land use in the diversion channel area and there are no plans by the City to expand its urban boundaries north of Copper Avenue. As a result, implementation of the trail plan along the diversion channel would depend upon the cooperation of Fresno County and of the property owners in the area.

#### Mitigation

1. The City should continue to work with the Friant Water Users, Bureau of Reclamation and the Fresno Irrigation District to resolve safety and liability issues for trail development along canal banks.
2. The City should consider construction of low profile fencing for trails along canal banks to protect users while allowing for maintenance equipment needs.
3. As an alternative to the Big Dry Creek Diversion Channel, the Trails Plan should consider using multi-purpose trail corridors along Copper Avenue and Willow Avenue to complete the Big Dry Creek Reservoir Trail.

9.1 Incompatibility with adopted plans and policies. The Trails Plan Amendment would amend all of the community plans under the jurisdiction of the City of Fresno. As such, the implementation of the trails would be a requirement of new development where relevant.

Cross sections for planned arterial and collector streets would require redesign where a multi-purpose trail is planned. For example, a plan line for Grantland Avenue is now being prepared which depicts a right-of-way for the four lane divided super arterial of 134 feet. The Trails Amendment proposes that the right-of-way for Grantland be expanded by an additional 15 feet to accommodate the multi-purpose trail. Similar right-of-way expansions would be



required along other streets planned as trail corridors. This could be expected to impact adjacent land owners and developers by requiring additional land dedication and would be an economic impact in addition to limiting net land for development.

In comments on the Environmental Assessment, the Central Unified School District raised specific concerns about trail development within the District west of Highway 99. Three district school sites (two existing and one proposed) could potentially be impacted by trail development.

1. The Herndon-Barstow Elementary School is located on the west side of Herndon north of Barstow and has plans for expansion. According to the District, if the additional right-of-way for the Grantland super-arterial and multi-purpose trail are taken from the west side of Grantland, the school site would be significantly impacted. The planned Grantland super arterial would not effect the Herndon-Barstow school site as it is now planned to curve from the Grantland alignment south of Shaw in order to cross Highway 99 and the Southern Pacific tracks to connect with Herndon. Grantland north of Shaw is planned as an arterial street and there should be sufficient width to accommodate the multi-purpose trail without adversely affecting the school. Depending on land use, it may be more efficient to locate the trail on the east side of Grantland, thus eliminating its effects on the Herndon-Barstow school.

2. Teague School is located along the proposed extension of Gettysburg and development of future Gettysburg and the multi-purpose trail could adversely affect access to the site. With specific design of Gettysburg, the City will consider existing access and the District will be given the opportunity to review and comment at that time.

3. The District owns an undeveloped school site at the southwest corner of Grantland and Shields, both planned as super arterials with multi-purpose trails. The impact on the school site in terms of right-of-way take is unknown at this time. Any requirement for right-of-way would be in keeping with the general plan and plan line process.

10.3 Specific traffic hazard to motorists, bicyclists or pedestrians. Impacts to traffic flow and specific safety concerns related to trail development would occur where proposed trails cross existing or proposed major streets. This is primarily the case on canal banks and railroad rights-of-way.

Canals, such as Big Dry Creek, the Herndon Canal and



Fancher Creek, often intersect major streets at mid-block. As trail use increases, these mid-block crossings could become more hazardous to motorists and trail users.

Existing railroads also cross many major streets at mid-block but are now controlled by crossing gates. As the rights-of-way are converted to trail use, the crossing gates will be removed and trail user/vehicle conflicts will become potentially significant.

Trail users within street rights-of-way would be controlled by the traffic signal system.

#### Mitigation

1. Where possible, trail crossings of major streets should be incorporated with the existing traffic signal system. This could require the re-routing of trails for short distances to follow the street rights-of-way to crossing locations.

2. Where trail crossings with major streets occur at mid-block, and where vehicle traffic warrants, the City should consider the following design measures:

- a. warning signs for trail users and motorists
- b. intersection identification, including cross-walks
- c. stop signs or signalization

11.2 Lack of emergency vehicle access and 11.3, Adequacy of design for crime prevention. The Fresno Police Department has expressed concern about emergency vehicle access and emergency communications. Multi-purpose trails are wide enough for vehicles, but there could be places where environmental conditions would prohibit vehicle passage. These areas would primarily be in the riverbottom and this concern would be discussed in the State prepared specific plan.

#### Mitigation

1. Areas where emergency vehicle access would be limited or blocked should be made known to emergency service agencies.

2. Emergency telephones should be installed at all trail staging areas.

3. Barricades should be placed to prevent non-emergency vehicles from using trails. These barricades should be of post and cable type, gate type or drop-post types and should



take into account maintenance equipment needs.

12.2 Site subject to flooding. Much of the trail system is subject to flooding, given the location either within the San Joaquin Riverbottom or along canal banks; the canals often carry flood waters from the foothills to the east of the metropolitan area. The trails are developed to a minimum standard, however, and covering by flood waters would have insignificant impacts.

13.3 Removal of street trees or other valuable vegetation. Limited urban trails are proposed along existing streets with mature trees lining the right-of-way, such as Van Ness, Wilson, Huntington Blvd. and Author Street. It is not the intention of the trails plan to remove existing trees so that a trail can be built but to take advantage of the unique urban setting by providing a marked trail system in these areas.



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